

Rock Products

DEVOTED TO THE PRODUCTION
AND SALE OF ROCK AND CLAY PRODUCTS.

Vol. III.

LOUISVILLE, KY., SEPTEMBER, 1904.

No. 6.

THIRTEENTH ANNUAL CONVENTION.

The National Association of Master Composition Roofers Hold a Strictly Business Session.

ST. LOUIS, Mo., August 24.—The thirteenth annual convention was called to order in the directors room in the apartments of the Master Builders' Association by President E. S. Bortel, of Bortel, Harris & Co., Philadelphia, Pa.; Vice President J. B. Ohligschlager, National Roofing and Supply Co., Louisville, Ky., and Secretary and Treasurer William K. Thomas, of Wheeler & Thomas Roofing Co., Chicago, Ill., in their respective stations.

The general routine of business, such as roll call, reports of officers, including financial statement, and the reports of the committees, was passed over with as rapidly as possible, and the secretary reported that there were fifty-two members in good standing, over twenty of which had reported either by wire or by their presence.

Secretary Thomas, who was chairman of the executive committee, states that the executive committee had held two meetings during the year, and that some memberships had been turned down in view of the fact that the committee felt that the objects of the organizations would not be fully carried out by the acceptance of such memberships, because the membership in this association is a guarantee that a roofer who belongs to it not only stands well at home but also has good standing with the members of the association and the trade at large.

The committee further suggested that some slight changes be made in the organization; that is, that an appropriation be made for the purpose of securing legal advice as to how this should be done. The appropriation was made for the advice and the matter laid over to be given consideration at the next meeting.

In view of the fact that the association is putting forth every effort to bring gravel and composition roofing up to the highest efficiency, it was recommended that the M. C. R. brand of felt, which is a copyright brand which belongs to the association, and is a guarantee that the felt is made in the way which the experience of this large band

of experienced roofers has dictated to be the best. These labels can only be purchased by the members of the association, and can not be used on any other than the specially prepared felt.

Other matters of general interest to the members of the association were taken up and discussed by the chairman of the executive committee, and numerous pertinent suggestions made. This report brought forth much discussion of an animated character, which was of great value to those present, and several matters were referred to the committee on rules and resolutions.

The committee on resolutions, of which Mr. H. W. White, of New Orleans, La., is chairman, reported on the death of S. J. Osborne, Jr., Cincinnati; W. P. Lupton, Pittsburg, Pa., and a member of the firm of Bortel, Harris & Co. Resolutions were drafted and ordered transmitted to the families of the deceased members.

A special committee on time and place of meeting was appointed. This committee consisted of J. B. Ohligschlager, H. C. Smither, E. F. Shaffer. This committee received invitations by wire to visit a number of places, among which were Niagara

(Continued on Page 17.)



E. E. Locke, C. B. Jamison,
Indianapolis, Ind. Buffalo, N. Y.
Wm. K. Thomas,
Chicago, Ill.

Emil Machwirth,
Buffalo, N. Y.
J. B. Ohligschlager,
Louisville, Ky.

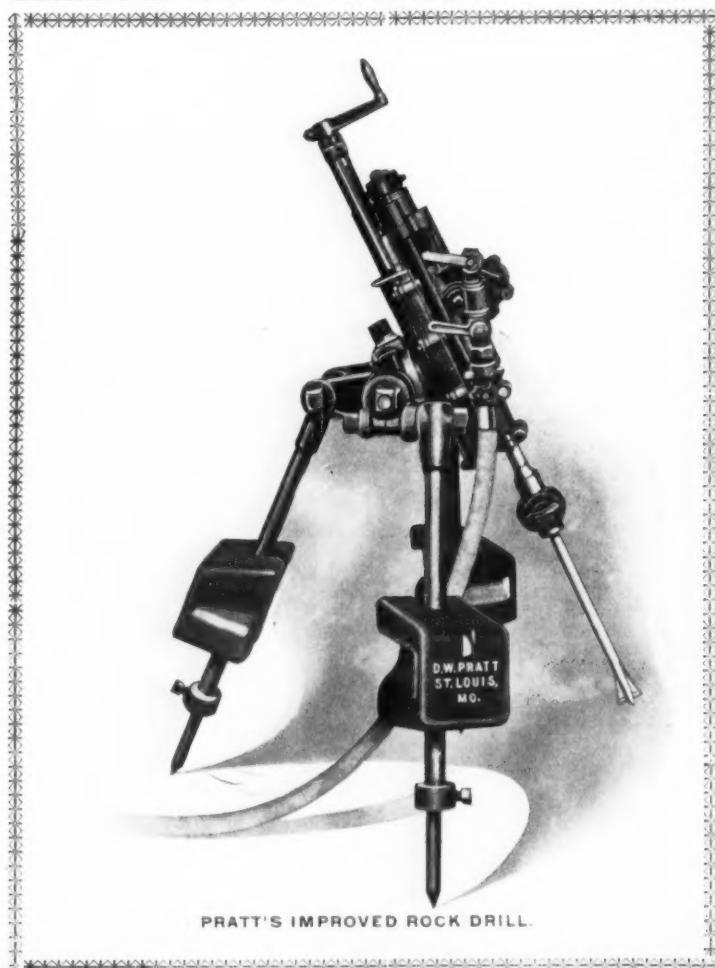
H. C. Smither,
Indianapolis, Ind.
E. S. Bortel,
Philadelphia, Pa.

H. W. White,
New Orleans, La.

P. LeGoullion,
Pittsburg, Pa.

A. B. Bartholomew,
Memphis, Tenn.

E. F. Shaffer,
Columbus, Ohio.
C. A. Monks,
Louisville, Ky.



D.W. Pratt

Machinery Company,

No. 614 North Third Street,

ST. LOUIS, Mo.

DESCRIPTION OF ROCK DRILL.

THE VALVE, which is the most important part of a rock drill, is of the Corliss or Rotary design and retains a perfectly steam or air-tight seat under all conditions.

Its movement is ABSOLUTELY and PERMANENTLY PRESSURE under any pressure. IT WILL START AUTOMATICALLY AT ANY PART OF THE STROKE. It will run at any speed desired, whether the VERY FASTEST or the VERY SLOWEST without danger of stopping. It will require LESS STEAM or AIR to do a given amount of work than any other drill, the valve being so constructed that the piston is POSITIVELY REVERSED.

It has a variable stroke and can be used at a stroke where others fail; this being one of the essential qualifications of a good drill, especially in starting a hole or working through seams. It strikes a very hard blow and its recovery is instantaneous. It has no peer as a mudder.

Our drills are made of the very best material the market affords, by skilled workmen, and with new and improved machinery, and particular care has been taken to make them the best on the market. All parts are interchangeable.

Complete plants of Machinery for Mines, Quarries and Contractors.



"MONARCH WIRE ROPE"

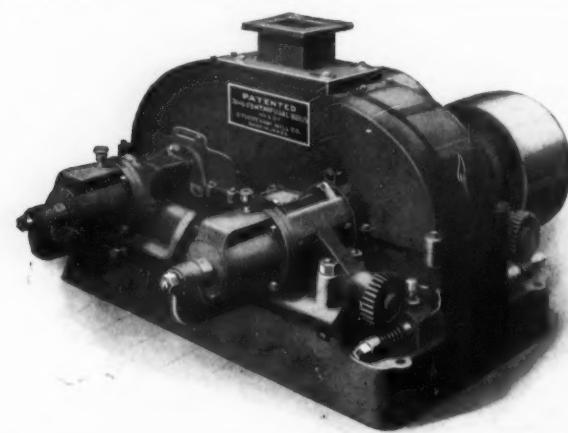
The Most Desirable Rope made for
Quarry and Contract Work. & &

It is not the color of the Strand that makes Monarch Rope so superior, but the material it is made out of. The Whyte strand merely ensures you getting the right rope.

MACOMBER & WHYTE ROPE CO.

19 and 21 South Canal Street, CHICAGO.

131 Worth Street, NEW YORK.



CENTRIFUGAL CRUSHING ROLLS

Crushing Shocks Absorbed, Rolls Balanced,
SHELLS ONLY move back in Crushing.

SEND FOR CATALOGUE OF

**Crushing and Grinding
Machinery**

**STURTEVANT MILL CO., BOSTON,
MASS.**

Tell 'em you saw it in ROCK PRODUCTS.

LEADING PRODUCERS OF BEDFORD OOLITIC LIMESTONE.

We are producers of Buff and Blue

AUDITORIUM HOTEL AND ANNEX, CHICAGO.

Bedford Oolitic Limestone,Sawed, Turned and Machine Dressed.**OOLITIC STONE CO. OF INDIANA.**

CONTROLLING

THE BEDFORD QUARRY CO.

AND THE NORTON-REED STONE CO.

ROBERT REED, Sec'y-Treas.

BEDFORD,

INDIANA.

The Above Buildings Were Erected From the
Buff Limestone of Our Quarries.**Perry-Matthews-Buskirk
Stone Company,**QUARRYMEN
AND...
SAWYERS.

CELEBRATED "P. M. & B."

BEDFORD STONEDimension and Mill Blocks.
Sawed Stone and Planed Mouldings.

LARGE TURNED COLUMNS A SPECIALTY.

GENERAL OFFICES:

317-321 Monadnock Block,

Quarries and Mills:
BEDFORD, INDIANA.

CHICAGO.

Eastern Agents:
Indiana Limestone Co.,
Fuller Building,
NEW YORK, N. Y.

John A. Rowe,
CUT STONE WORKS.
BUILDING STONE

Rustic Monumental Work is Our Specialty.Our design book containing
52 designs, price . . \$1.00

BEDFORD, IND.

Indiana Bedford Stone Co.,**MILL BLOCKS and
SAWED STONE.....**Complete Stock of Seasoned
Buff Stone and Quick Service.

BEDFORD, IND.

BEDFORD STEAM STONE WORKS
QUARRYMEN OF
BEDFORD STONE

TURNED AND FLUTED.

Size, 22 ft. 6 in. long x 2 ft. 8 in. diameter.

Rough, Sawed, Planed and Turned.

TURNED WORK A SPECIALTY

Shipping Facilities: C. I. & L. Ry. St. Ind. Ry.

BEDFORD, IND.

Tell 'em you saw it in ROCK PRODUCTS.

MAHAN & COMPANY
Bedford Stone

Block, Sawed, Planed, Turned and
Monumental Stone.CHICAGO OFFICE,
1116 Chamber of Commerce Building.QUARRIES AND MILLS:
BLOOMINGTON, INDIANA.

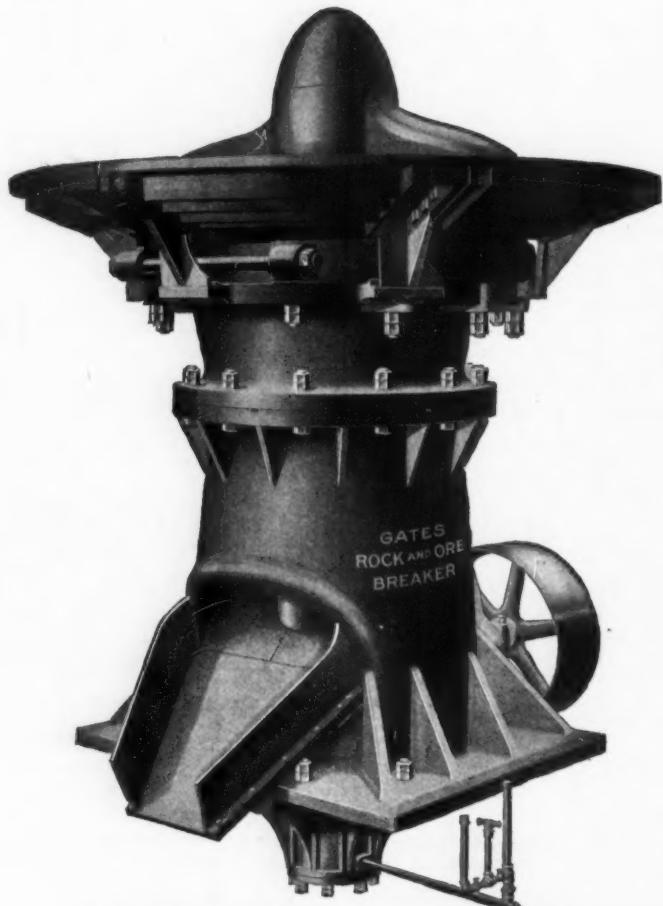
Write us for Prices.

Allis-Chalmers Co

CHICAGO



Breaker Talk



New Style "K" Gates Rock and Ore Breaker.

Talk 2

Gates "K"

Has Suspended Shaft and Head,—

Saving Power

See future issues
for other "Talks"



Bullock

Electrical Apparatus
for all purposes.

Canadian Representatives: Allis-Chalmers-Bullock, Ltd., Montreal.
Tell 'em you saw it in ROCK PRODUCTS.

**O'CONNELL & FEELY'S
CHEMICAL PROCESS FOR
Hydrating Lime.
FULLY COVERED BY PATENTS.**

Requiring only a small amount of machinery, it is most simple and economical in working and most perfect as to results obtained, making thoroughly HYDRATED LIME by QUICKEST and CHEAPEST known process. It requires no Bolting Reels, Screens, Mixing Machines or Storage Bins, and can be readily installed in any lime house, adjoining a lime kiln. It is, therefore, not very expensive to install, and is within the reach of all manufacturers of lime.

Two years of critical use by one of the largest firms in the City of New York, have proven the product so thoroughly satisfactory that said firm has arranged to take all the output of two plants using the O'Connell & Feely Process.

The process can be seen in operation at the plant of the James O'Connell Lime Co., at White Plains, N. Y., 22 miles from the New York City Post Office. Also at the plant of O'Connell & Hillery Company, Tuckahoe, N. Y.

Now is the time for considering the installation of a plant to hydrate your lime and I earnestly solicit your correspondence thereon. A Sample of HYDRATED LIME made by the O'Connell and Feely Process will be gladly mailed to parties wishing same, on receipt of application therefor.

FOR SALE—The PATENT RIGHTS for Canada and England of the O'Connell & Feely Chemical Process for Hydrating Lime. This is a business opportunity without parallel. Address,

**JAMES O'CONNELL,
651 W. 131st Street, New York, N. Y.**

Fisher's Hydraulic Stone System,

W. H. FISHER, Patentee.

Architects recommend it. People are delighted with it.

A Sure Money Maker.

We have solved the building material question. Every block a perfect one, because the tamping is done by hydraulic pressure and automatic hydraulic kneading, which drives out all of the air and closes all of the voids. The machine is entirely automatic and the process such that the necessary chemical reaction is not hindered. All shapes and designs, veneer blocks for frame structures, angular blocks for hollow walls. Walls built from our block are absolutely sanitary. We make thousands in a day, large profits are beyond question. Our product is in constant demand. This is the only system which at once removes the brick from the iron or wooden mold, thus giving the hardening process the greatest possible freedom. A plant can be seen in full operation at Memphis, Tenn., where the Memphis Hydraulic Stone Co., have one of the finest up-to-date plants in the country.

**ALL MACHINERY GUARANTEED
FOR ONE YEAR.**

WRITE FOR TERMS OR INFORMATION

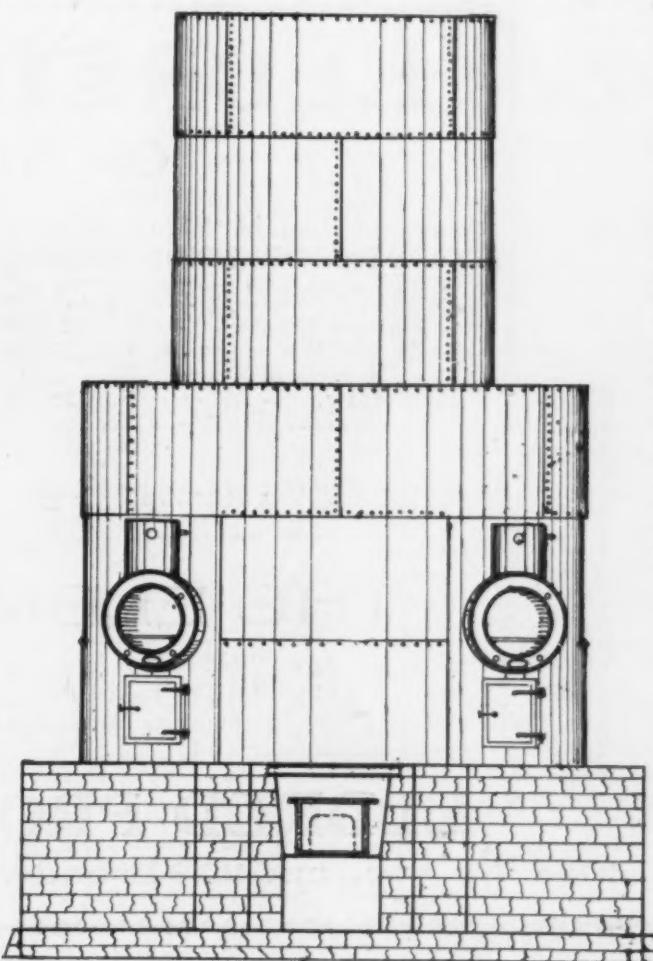
No. 384 Second Street,

MEMPHIS, TENN.

Tell 'em you saw it in ROCK PRODUCTS

**James O'Connell's
Patented Boiler Arch and
Continuous
LIME KILN.**

Built on stone foundation, 6 feet high. Solid brick kettle, capable of fully withstanding weight of falling stone. Only kiln with inside arches, thus confining all heat and avoiding loss from radiation. None of the usual repairs on outside of fire boxes caused by expansion and contraction. No burning out of iron work around fire boxes. If outside shell of kiln is painted twice a year with coal tar there is absolutely no wear-out of the iron. Adapted to burn soft coal, crude oil and wood.



OUTSIDE VIEW OF BOILER.

Turns out more lime, with same heat, than any other kiln. Draft is always regular and under control, regardless of weather. Same heat that burns lime-rock makes steam to operate conveyor carrying stone to top of kiln, about 50 feet high, and also serves to pump out quarries if situated within reasonable distance, AND ALSO MAKES THE STEAM TO RUN THE BLOWERS WHICH PRODUCE THE COMBUSTION TO BURN THE OIL OR SOFT COAL. Boilers always carry full dry head of steam, and arches do not burn out where boilers are placed in. This patent will save you at least 20 to 30 per cent. on burning lime. Only kiln in market to-day turning out perfect product at reduced cost, doing its own work and running as nearly automatic as possible. This kiln burns either lime or cement rock.

THESE BOILERS CAN BE FITTED IN THE ARCH OF ANY KILNS
ALREADY ERECTED.

**JAMES O'CONNELL,
651 W. 131st St., New York, N. Y.**

HARRISON SUPPLY COMPANY,
34 India Wharf, BOSTON, MASS.

Chilled Steel Shot

For Sawing and Rubbing Granite, Freestone and Marble. Warranted Superior to all other brands. A Large Stock Constantly on hand.

Also Carborundum, Emery, Putty powder, Etc. Supplies of all kinds for Granite Polishers.

GRANITE STAIN ERADICATOR

Which we guarantee will permanently remove iron, sap, and oil stains from granite without injury to the stone.

Every hand polisher of Granite and Marble should write for information regarding our "Combination Box."

SAMPLES AND PRICES UPON APPLICATION.

NATHAN C. HARRISON, General Agent.

SAND LIME BRICK

National System.

Lime Hydration

Colonial System.

Tinlay Sand Dryer.
Clay Working Machinery.

National Brick Machinery Co.

831 Chamber of Commerce, Chicago.

The ELDRED PROCESS CO. OF NEW YORK

Beg to announce that they have acquired all rights to the patents of BYRON ELDRED relating to the CONTROL OF COMBUSTION. These patent rights embrace:

United States, - No. 692,257.
Great Britain, - No. 17,197.
Dominion of Canada, No. 75,009.
Republic of Mexico, No. 2,492.
Spain, - - No. 28,558.
Belgium, - - No. 158,902.
Italy, - - - No. 147,239.

France, No. 314,530.
Portugal, No. 3,765,229.
Norway, No. 11,414.
Sweden, No. 14,549.
Austria, No. 12,696.
Russia, No. 8,275.
India, No. 36.

And all pending patents on the regulation and control of the temperature and volume of Flame.

THE ELDRED PROCESS

is the only method of making a "Wood Flame" from coal. All Lime Manufacturers recognize the wood flame to be the only satisfactory flame for lime burning. The Eldred Process will save 25 to 60 per cent on the fuel account and will burn better lime. There is no stoppage of plant during installation and no expense for the equipment until a demonstration of the saving is completed. Correspondence is invited.

ELDRED PROCESS COMPANY,

208 Fifth Ave., and 1128 Broadway,

NEW YORK.

BRICK MACHINERY.



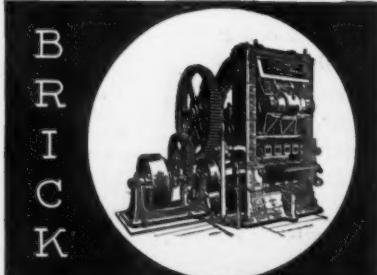
The Best Machinery for the manufacture of the best product. The quality of our machinery insures the quality of your brick and freedom from repairs. Machinery for the manufacture of clay products by all processes.

THE AMERICAN CLAY-WORKING MACHINERY CO., BUCYRUS, OHIO.

BURIAL VAULTS

No Artificial Stone Plant is complete unless they manufacture the Parry Patent Burial Vault. Perfectly air-tight and water proof. Secure your county on royalty. A money maker. Address

L. L. PARRY, Mansfield, Ohio.



MACHINERY
FOR MAKING
CLAY | BRICK | SAND & LIME
SHALE | COMPLETE OUTFITS
U.S. BRICK PRESS WORKS
ERIE, PA. U.S.A.
BUFFALO CHICAGO KANSAS CITY

MILWAUKEE BAG CO.

MILWAUKEE, WIS.
HIGH GRADE PRINTERS & MANUFACTURERS OF DUCK, OSNABURG AND JUTE CEMENT BAGS.



DEALERS IN PAPER BAGS & TWINES.
WRITE FOR PRICES & SAMPLES.

Tell 'em you saw it in ROCK PRODUCTS.

ROCK PRODUCTS.

7



Entered as second-class matter March 4, 1904, at the Post Office at Louisville, Ky., under the Act of Congress of March 1879.

THE FRANCIS PUBLISHING CO.,
Publishers.

E. H. DEFEBAUGH, President and Manager.
FRED W. RUGG, Secretary.

A monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganese, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper; so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

"TELL 'EM YOU SAW IT IN ROCK PRODUCTS."

SUBSCRIPTION RATES, \$1.00 per annum, postpaid anywhere in the United States, Canada or Mexico; \$1.50 elsewhere in the Postal Union. Single copies, 10 cents.

ADVERTISING RATES will be furnished on application.

ADDRESS ALL COMMUNICATIONS TO

THE FRANCIS PUBLISHING COMPANY,
431 W. Main Street, Louisville, Kentucky

BRANCH OFFICE, NEW YORK CITY:

Room 502, 136 Liberty Street,
ALEXANDER CRISTADORO, Manager.

LOUISVILLE, KY., SEPTEMBER, 1904.

The Salesman.

THERE are a good many theories advanced by writers as to the salesman's position and his place in the institution, but the practical, every-day fellow who controls the business end out at the end of the fishing pole is the big factor in the institution. I heard a man say the other day that the salesman must be a good mind reader, know how to approach people and be thoroughly familiar with his own goods so that he can tell the tale without any pause except when it is necessary to let the buyer answer the telephone. But the real place for the salesman is to sell goods. If he has faith in his line and wants to succeed he will get acquainted with everybody in his territory who is interested and find out what their needs are, keep in touch with their business and just keep on a fishin' every day in the year, either out in his territory or at his desk in the office, with a good card index as a guide, and it will be very little trouble to write a little letter to the fellows who will be wanting something and you don't need to be afraid of the theory advanced by some people that the trade don't buy from the same house year in and year out as they did in times past. It is a contention that these always depend on the salesman and the goods he has to offer. The successful man on the road is he who can keep his trade and get a fair price for his goods when he does sell them. Any farmer can give them away or hunt up new customers from year to year in exchange for the old ones, but it is the continuous business with a concern that makes your money.

PLACING your explosives in the hands of one man, providing he is the right man, and you examine his head and see that he does not smoke cigarettes or pipe only on state occasions, will save lives and time.

STAMP the weight on the package.

CEMENT for statuary is well considered.

It does not pay to buy trade in any line.

GREECE is a great manufacturer of roofing tile.

AN elaborate system of time keeping pays for itself.

TERMS of sale are important to keep before your customer.

A MACHINE shop attached to the quarry is a money-saver.

The Norwegian granite quarries are doing an increased business.

A TWENTY-EIGHT mile order for sewer pipe is no small pumpkins.

UNIFORM packages in lime and cement means a more uniform price.

THE crushed stone industry is far from suffering from too much stone.

WASTE in the stone business should be added to the cost price of the buyer.

THE problem of the best way to strip a limestone quarry is still to be solved.

THE car for handling limestone overtops the old method of wagon and carts.

THERE is still room for more organizations and better ones in the stone business.

AGRICULTURAL lime should interest everybody in the business, including the farmer.

THE three-dollar-a-day employee will soon be a thing of the past in the stone trade.

INDIA is able to secure its building material of granite from the Madras Presidency.

THE granite trade in the East is very much improved over the first six months of the year.

THE strikes in the big cities have caused the Bedford stone men to complain of a lack of orders.

IT is a good thing for some of the marble concerns that the stock company booms are a thing of the past.

INFORMATION as to the analysis and heating value of coal is valuable to the manufacturer of rock products.

IF cement will preserve metal the secret of preventing the collapse of the twenty-four story building is solved.

THE concrete base for monuments is the latest. There is no reason why it should not go with the concrete coffin.

A SYSTEM that includes the actual cost of every job worked out in the stone shop, will do away with senseless competition.

THE export of American cement to Australia, Africa and South America can be done if the cement manufacturers will only take a hand.

IN some cases the manufacturer claims that system is too much trouble and expense. To know whether you are losing or making is worth something.

IT should not be a question of how much more does it cost to grind cement more finely, but whether it increases the efficiency and enables you to ask more for your brand of cement.

THE man that builds the roof and furnishes the material, like other manufacturers and contractors recognizes the fact that ROCK PRODUCTS is one paper that will be an effective mouthpiece.

THE first thing a quarryman commences to talk about when he meets a competitor from another section of the country is as to the best methods in drilling and who makes the machine.

SEWER pipe men are not discouraged, for every few days they pick up a few mile orders and the factories keep going.

IT does not do any good to overestimate the amount of stone you are getting out, but by telling the truth you may learn something from your competitor that will reduce the cost of getting out your stone.

THE present prices of building materials should add impetus to the permits for new buildings, and the quarrymen and manufacturers in rock products lines should get busy.

FIRE Proofing tests of concrete construction seems to be the leading thought with many of the readers of ROCK PRODUCTS nowadays, and since the prospective increase in the demand for cement.

THE trade can be thankful to know that Builders' Supplies Associations locally are becoming more successful, due to the manipulations of the labor unions, and the fact that local operations are benefited thereby.

A WRITER emphasizes the fact that the tombstone man should be as closely connected with the family as the pastor or the family physician. That is good logic and will apply in most any line that a man is selling to the trade. Do business always as if you want the man's friendship and you are likely to get it and keep it.

MAKE your literature valuable. Every man who reads the trade and technical journals in his line, when he sees something, which is of interest to him, should make a card and have an index and file his papers so that when a subject comes up he can go to his file and compare notes with his own experience, so to speak, and thus be able to form a correct and valuable opinion.

THE means of technical work and technical intelligence should not be neglected by capital. Much has been lost by the failure on the part of some enterprises to spend sufficient money to procure well trained men to handle the technical end of their business. Too often they make the mistake of employing a man because he is willing to work for less money, than one with a thorough technical training. In this case as in others they should bear in mind if they want good service they must pay well for it, and that good service at a high price is far cheaper than poor service given for nothing.

A good suggestion from a bright magazine, *The Garry Messenger*, says take down the crape from the door and look a little bit cheerful in speaking about the times. It seems hard to look cheerful when we have to look in the face of the labor agitator and know that in all the large centers the labor unions generally want to control the building interests, no matter who pays the bills so they don't have to pay them, but this won't last forever. If you shoot the arrow straight, hit the bull's eye and let the chips fall where they will, you will be able to run your business hereafter. As long as you daily with the labor unions and let them dictate terms to you whenever they feel like it, the industry and you, as the individual who pays the bills, will have to suffer, and this advice should be carried out until the man who works for you feels like he wants to give you value received for his work and is satisfied with good treatment and a fair salary, and then it becomes you, as a man, to not let him ask for an advance when he is worth it, but give it to him. Don't make a machine out of him.

ST. LOUIS=The World's Fair City.

ECONOMICAL FOR VISITORS.

ST. LOUIS, September 2.—This most favored city of the world is now rejoicing in an extraordinary combination of attractive things and conditions, the wonderful Fair, the remarkable weather, ideal for sight-seeing, and the ample accommodations at reasonable rates for visitors in this city of beautiful homes. This combination with other desirable things as well, is having an increasing effect and the vicinity of St. Louis' great central railroad station, the Union Depot, looks all the while like a fair itself from the throngs that seem to be there all the time. They are American crowds though,



"LIBERAL ARTS."

collected and self controlled, no jostling nor excitement, but calm and orderly movement back and forth, in and out. Trainload after trainload of men, women and children, distribute themselves by means of the splendid transportation facilities of St. Louis, while the other trainloads are carried away to spread the news of the marvelous sight, and of the surprisingly low rate at which it can be seen by those who need to practice economy. An extreme instance of this was shown last week in the case of twelve boys from an industrial home at Marionville, Mo. Their lodging was free, given by a friend of the institution, but they paid all their other expenses and the entire cost for the week's visit for each boy ranged from \$11.50 to \$16.00. There are records of individuals, without friends in the city, staying for a week, visiting the Fair each day, and making less than twenty dollars cover the whole cost.

I knew a man in 1893 who mortgaged his farm for the sole purpose of taking his family to the Columbian Exposition at Chicago. In these more prosperous times there is no need for anyone to do that to see a sight that is far greater than, in 1893, anyone ever dreamed of.

Educational Feature Pre-Eminent.

This World's Fair is probably the most stupendous educator that has ever been produced by man. It abounds in object lessons, from the making of cement blocks to the unlimbering of machine guns. It is the first enterprise of the kind in which the main idea is to show things in doing and in making, and every encouragement has been offered to exhibitors to show how things are made or done.

Our government has splendidly done its part in this direction, and in its magnificent building shows processes of many kinds, the working of the postoffice, the coining of money, engraving maps, chemical research in the laboratory and many more too numerous to mention. Numbers of these object lessons give us information in a few seconds that hours of reading will fail to convey. For instance, heliographic signaling, which is done from

the front of the Government Building to a point at the other end of the sunken gardens. It needs but a very short inspection of the working of the instruments, which are simple enough in themselves, to fully understand the system that gives such effective service in the field, and not merely understand it, but have it well fixed in our memory.

Many of the exhibitors are doing impressive work of this kind, potters are turning their wheels, cement block men are making hollow blocks for buildings, very closely resembling stone. The cement pavilion in the Mining Gulch, a picture of which, in its partially complete state, was given in last month's Rock Products, attracted attention as an object lesson in cement construction with reinforcement of steel rods. This cement pavilion, the exhibit of the Associated Cement Manufacturers of America, is so near to being finished that by the time we go to press, Mr. Strong, the secretary, will have moved the office of the Association from down-town out to the cement pavilion itself, though I understand that work will be continued right along in order to show the uses of Portland cement.

The Cement Industry Feature.

At every exposition some one industry attracts public attention to a greater extent than any others. I remember several expositions, each of which had its distinguishing industrial feature. At this one, cement and its uses has, perhaps, taken the lead. Much of the really beautiful sculpture, or modeling, that adorns the buildings and grounds of the World's Fair, that is generally supposed to be staff, is cement. Instances of this are two figures of which illustrations are given. The one is "Transportation by Rail," by George J. Zolnay; this is on the Palace of Transportation; the other is a statue representing liberal arts, by Sculptor Chas. Y. Harvey. This is on the Palace of Liberal Arts. These and other principal "sculptures" are at least finished in cement.

It seems strange that those remarkable artists and skillful manipulators, the Japanese, have not recognized the many possibilities in Portland cement. They probably will soon, for they are very keen people, with an eye to every chance, artistic and commercial. In their installation at the top of the hill, above the power house, the gate is wide open and an inscription over it says, "Welcome to Everyone." It is true that there is a bazaar there with Japanese articles for sale and, by the way, the prices appear quite reasonable. There is one agreeable feature about all the Japanese exhibits. You can look at the things as long as you like without any pressure being put upon you to force you to buy. Also the Japs do not appear to have

any use for "barkers," which is another reason why I take off my hat to them.

In this Japanese bazaar I noticed that all the male attendants were Japanese (I would like to coin the word "Japans," for we don't say Germanese, nor Russianese.) With every one of these Japanese salesmen there appeared to be an attractive American "saleslady." While I was in front of a stall the other day there stood alongside of me a little Japan woman, in full native costume. She was laughing and talking to her countryman across the counter. I didn't understand a single word, but the manner and style looked very much like any other girl of any other country trying to fascinate the man. At that moment the attractive



"TRANSPORTATION BY RAIL."

white "saleslady" stepped up from the other end of the counter, with the evident intention of interrupting the conversation. The man instantly turned his back upon his countrywoman and walked away with the other girl, while the little buff-colored Geisha stopped smiling, gave a pathetic little sigh and clicked off out of the building on her wooden clogs.

Progress of American Sculpture.

To all who are interested in the plastic arts, and many of the readers of our paper have a very close interest in them, a visit to the sculpture courts of the Art Palace must not be omitted. Here is much to consider and to admire of works in marble and in plaster. It is very gratifying to see what enormous progress has been made in purely American sculpture.

Without pretending that these are the only, or even chiefly noticeable pieces, my attention was caught by John J. Boyle's "Stone Age," a colossal group of a woman, wielding a stone axe in defense of her two children, a dead wolf lying at her feet. The "Fountain of Life," by Helen F. Mears, is an ambitious work. This is executed in marble and is a great three panel piece with figures in relief.

The plaster cast is there of the well known statue by St. Gaudens, the "Puritan." I always want to object when I see this rendition of the Puritan by St. Gaudens. The sculptor is evidently not in sympathy with puritanism. The figure is powerful, but it expresses a brutal self-sufficiency and sectarian pride. It is not fair to the old puritans, for though they were savage fanatics—bibliolaters who would tolerate no "ism" but their own, it should be remembered that they, or their fathers, had carried on a long and deadly fight for civil and religious liberty and a cleanly life. Worsted in the struggle, they left their native country for an unknown land. In spite of their fierce bigotry they possessed the manly virtues that enabled them to found the greatest nation of the earth and stamp it with their speech, their thought and their laws. If the puritan ruled in the New England States to-day it might be less comfortable for ma-



Admiral Dewey's Portrait in Mosaic.

ny of us, but there would be no instance of men in high places sharing in the proceeds of vice and crime.

In making the old puritan an object of contempt the sculptor has been not only untrue to history, but has shown a want of patriotic feeling.

Passing to the court containing foreign sculpture it is evident that while we have made great advances we have not left the rest of the world quite behind. A marble life size figure of a young woman seated in a chair and fallen asleep over her work, is very good. This is called "The Seamstress," by A. Laforet of Milan. Reinhold Begas, the Berlin sculptor, has a colossal group in marble of two nude figures, a man and a woman kissing. The title is "The Electric Spark. This is very effective. So also is the price, 152,000 marks, or about \$35,000.00.

Admiral Dewey's Portrait in Mosaic.

In the Palace of Mines and Metallurgy there are quite a number of specimens of art, mostly in the shape of ceramics and nearly all American. In the California exhibit Henry Gervais, marble and mosaic worker of San Francisco, has a portrait of Admiral Dewey in mosaic. It is an oval, between two and three feet high. Some of the colors, as the yellows for the gold buttons are pieces of California onyx, but most of the stones used are lime carbonate marbles. The picture suffered some damage in transportation, several of the tesserae in the middle were loosened and have not yet been properly replaced. Two large inscription tablets of terrazzo work by Mr. Gervais are seen on the monumental arch which forms the main entrance to the California exhibit. The gentleman in charge of the exhibit is Mr. George Madeira, to whom the thanks of Rock Products are due for his courtesy and help.

The Exhibit of Atlas Cars.

An exhibit in this building, which is very closely connected with all kinds of brickmaking, clay, or sand-lime, dry pressed, stiff mud, or soft mud, to say nothing of every description of mining and quarrying, is that of the Atlas Car and Manufacturing Co., Cleveland, Ohio. Going into the Palace of Mines and Metallurgy at the main entrance from the lagoon the company's exhibit is on Aisle G, one of the aisles on the right hand. It is at block 73, next to the imposing exhibit of rock and ore crushing machinery of the Austin Manufacturing Co., Chicago. The Atlas Car Manufacturing Co.'s exhibit, though possessing an extensive floor space, is all the more effective for not being crowded, consequently only a small proportion of the company's products are represented; these are quarry and mining cars, frogs and switches, and the self-oiling mining car wheels.

Three cars are shown. The one is a special, rotary mining car for ores. This is set lower down on the track than other makes of cars of this type, and the weight is concentrated over the wheels, making it easy riding and very stable. When dumping, the door is released at the same time as the body by one movement of a lever, which controls both latches. The car shown here is made of sheet steel. The bottoms are $\frac{1}{16}$ in. and the sides and door $\frac{1}{16}$ in. thick. The car is made in capacities of from 12 to 36 cubic feet. It can also be provided with draw bar for hauling in a steam train.

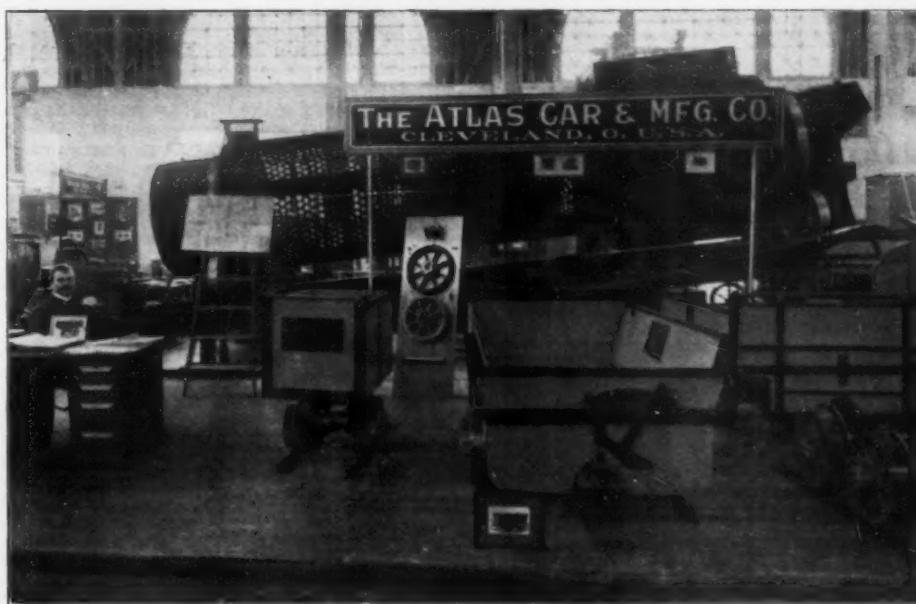
An end-dump quarry car shown here is equipped especially for handling large stone that is loaded by man power instead of steam power. The edge of the car is set especially low to the track. The car is reinforced along the sides, stiffening it and affording protection against heavy stones. The draw bar runs the whole length of the car, and equalizes the strain from end to end. The drawheads are of cast steel and are so arranged that the thrust occasioned in coupling and uncoupling is taken up by longitudinal channels that are riveted to the bottoms of the car.

The draw bars are provided with grooves that allow links to move back. This answers the purpose of a radial draw bar and enables the cars to take very short curves.

The car seen on the extreme right in the photograph is a special quarry car, well adapted for skip loading, as the body of the car protects the wheels from stones accidentally falling over. The door opens automatically as the car is tipped.

Self-Lubricating Car Wheel.

One of the most valuable inventions shown here is the self-lubricating wheel. This, although



found so effective is very simple. An ingenious arrangement of a single bolt, which itself is entirely covered in, holds the wheel securely on the axle. Every part is solidly covered and the only place where dust could get in is at the rear end of the long bearing; this is effectually protected and closed by a felt ring. The result is that the consumption of lubricant is very moderate and when oil has to be given it is perfectly applied.

I was so fortunate as to be able to make the photograph of the exhibit when a very genial and able member of the company, Mr. Wright, was present and have to thank him for much of the information obtained, though an inspection alone will be sufficient for any judge of these matters to be convinced of the excellent points of the cars and the wheels, as well as the high class workmanship. In addition to the exhibit in the Palace of Mines and Metallurgy the Atlas Car and Manufacturing Co. has a number of pieces in the Mining Gulch and other parts of the Louisiana Purchase Exposition, in the shape of dump and other cars, rails, switches, frogs, turntables, etc., which are doing good service.

The Schwarz Sand-Lime Brick Exhibit.

We must not give all our time to art and neglect the greatest factors in our modern civilization—machinery and industrial processes. The exhibit of the Schwarz system of Sand-Lime Brick is in the northeast corner of the Palace of Mines and Metallurgy, the corner nearest to the Government building and the Sunken Gardens. This is in charge of Mr. John J. Coleman, who is there all

the time, and a conversation with him is an education in sand-lime brick manufacture. Mr. Coleman has been a bricklayer, a brickmaker in the Klondyke, pretty nearly up to the arctic circle, and then a gold miner. He still owns some promising claims in the Klondyke, but he has decided that there is a more certain and assured gold mine in the Schwarz system of sand-lime brick manufacture.

The specimens shown here are certainly beyond all criticism so far as appearances goes, then as to the tests of quality, undeniable evidence is offered. A certificate of compression tests made at Columbia University, New York, under the supervision of Ira H. Woolson, E. M., showed that the ultimate strength of the Schwarz sand-lime brick was from 3,592 to 3,633 pounds per square inch. This resistance to crushing is enormously greater than is needed in any ordinary building brick, which effectually settles the question of crushing resistance.

As to absorption, it is claimed that the sand-lime brick absorbs 30 per cent. less water than the common burned clay brick. In this test there is not much need for scientific apparatus nor certificates. We Missourians can be shown right away, by pouring water upon a brick and seeing how long the water remains upon the surface, which is quite long enough to make you tired of waiting for it all to be absorbed.

The test which I, personally, found to be the most interesting was a fire test. A brick which is to be seen at the Schwarz exhibit has been subjected to as severe a test as any one could reasonably

(Continued on Page 15.)



From Our Own
Correspondents.

GREATER NEW YORK.

NEW YORK, August 31.—Although there is a dullness of considerable extent on in large building, yet the smaller work is keeping right along in good shape. Common brick are firm at \$7.00@7.50 and the demand takes care of all that come in. Front bricks are holding up well at from \$26.00@32.00. There is no change in prices of lime. Cement has rallied a little, but is yet very low. At the present writing it looks as if there would be a prolonged contest in the building situation. The men say they are willing to have some form of arbitration but not the one under which they have worked during this year, while the employers say they must work under that agreement or else they will inaugurate the "open shop." Both sides are very determined, and it looks, unfortunately, as if a long contest was in prospect.

Personal Responsibility.

A New York building man just down from Vermont, said he came across a case there where a labor union had carelessly violated its agreement with the employer, causing him great loss. He brought suit for damages against several of the men who owned property, and the first court held that he was entitled to damages and also that the labor organization was like a partnership, all or each being responsible for the acts of the union, and gave him a verdict against the men personally. It has been appealed to a higher court and the judgment had been affirmed, and when he left they were preparing to carry it to the State Court of Appeals.

Mr. Perry, of the Rockland-Rockport Lime Co., said trade was holding up fairly, despite all the unfavorable conditions, and he had no special complaint to make. Prices remain unchanged.

In talking with Mr. C. J. Curtin, 39 Cortlandt Street, president of the Farham Bros. Lime Co., he said that the general market conditions for their line are good. Country trade is much better than a month ago, and city trade is growing constantly, owing to the fine character of the lime produced by them; and if the strike which is now on, is ended soon he expects a very busy fall in the sale of this line amongst the dealers of greater New York.

Mr. Curtin has just returned from his lime works at Cheshire, where many needed improvements are being made in the general construction of the work, which will soon result in giving them one of the most up-to-date lime plants in the country.

Anything But Cheerful.

A lime man gave vent to his feelings the other day, as follows: "The regular lime business in this town is getting on a worse and worse basis yearly, and there is no chance for you unless you have some special brand. There is plenty of building going on, notwithstanding the labor troubles, and there ought to be enough for every one and at fair prices. But what is the condition? Here is the biggest and most responsible lime company in the country makes its price 87 or 88c per barrel. This is no more than a reasonable figure to the builder, while it holds the price at a point which gives other lime concerns a decent profit. But in come the Pennsylvania manufacturers who deliver lime at 65 or 70c at the job. There is nothing in it to them at such figures nor to any one else, yet in the last two months they have put in 30,000 barrels and are now sending in 700 to 800 barrels per day. As if this was not bad enough, I ran across a Western lime man who said that with his unequalled facilities he was going to put 200,000 barrels of lime into New York yearly at a price that would skin the Pennsylvania men to death. What a cheerful prospect!"

Mr. James E. Dutton, 42 E. Twenty-third Street, secretary of the Granite Manufacturers' and Dealers' Association of New York, has returned to town after a vacation spent in Maine. He visited and inspected his own quarry, but that was the only occurrence of the trip that was in the nature of business, it being devoted entirely to outing and pleasure. He was pleased to find waiting for him a goodly amount of orders that had come along, down to the inception of the recent strike and lock-out.

Sorry to Miss the Barbecue.

Mr. Albertson, of the New York Granite Co., St. James Building, is home again after a vacation spent at Shelter Island. He had intended to include a trip up Barre way, and when he saw the picture of his Barre friends dancing around the barbecue, brandishing the carving knives, he was more than ever sorry that he was unable to carry out his original plan, because it would have brought him there just in time to attend the feast. Business has been very good since his return. Referring to some work on hand, he said that some years ago that would have been of Scotch granite, but the 20 per cent. duty made it uphill work for them, and when 30 per cent. more was added, they gave up the contest, and American granite is now working into all that trade and serving as well. In the rough they can not market the Scotch granite here now, but in very elaborate carvings they can get it all right, because there is some work of that kind that they yet can do cheaper than we can.

The Massachusetts Monumental Co., 150 Nassau Street, is erecting a pedestal with a fifteen foot base in the Holy Sepulchre Cemetery in East Orange, N. J. It will be surmounted by a cavalry group in bronze. They are also erecting in Greenwood Cemetery a Celtic cross, ten feet four inches high, richly ornamented with palms on the front, and with interlaced work on the other side, from designs by Mr. Leammon, the New York manager.

New England Business Picking Up.

Mr. Dickinson, of the Bedford Quarries Co., Flatiron Building, said business had been very good indeed. Up to August 1 the orders had been as large as for all of us last year. A recent order was 100,000 feet to the Syracuse courthouse. The New England trade, which had been very dull, was now picking up and orders were coming in well from all points in that section.

Mr. John R. Walsh, president of the Bedford Quarries Co., was in town recently on his way to Europe to bring back his family who went there some six weeks or so ago.

Mr. W. S. Martin, of the Smith Granite Co., of Westerley, was in town, as was also Mr. Orrin S. Hammack, who had just got down from Barre.

Mr. J. Witherspoon, of the Witherspoon Plaster Mills, Twenty-seventh and Broadway, said the local plaster business was running slow but the general outside trade was pretty good. Mr. Witherspoon recently got letters and circulars from some parties in Belgium and Switzerland on the subject of hollow building blocks, and the senders evidently thought it was a new industry to this country and wished him to take it up. He said the blocks were very crude and not to be compared with the fine products we turn out here. To one party he sent all the home catalogues he had, while for the other he scissored out all the Hollow Block advertisements in Rock Products, pasted them on a card, and sent them to him, thinking that such a display would be an eye-opener to him, and would be more effectual than the longest letter in making known to him the fact that we knew something of that industry over here.

Sand-Lime Brick Plant Working Fine.

Mr. Frank, of the Schwarz System Brick Co., 10 Bridge Street, has just returned to town after a tour amongst the various sand-lime brick factories which they have built and equipped under their system. We found them all working smoothly and successfully, under perfect control of the operators, and turning out standard brick which commanded the top market price and gave the most complete satisfaction. Inquiries are coming in constantly of a character which show that this industry is being more extensively taken up by practical men, large and successful architects and builders all over the country.

Work on the sand-lime brick plant of the Peerless Brick Co., One Hundred and Eighteenth Street and East River, is progressing steadily.

The work is being well and thoroughly done under the supervision of Mr. Payne, who has his office on the grounds, and although its progress is necessarily slow by reason of the care given to every feature of it, still the company expects to be making bricks this fall. The company has leased eight additional city lots adjoining the property already owned by them, thus giving a frontage of 200 feet on the Harlem River and the entire block 350 feet from the water line.

Mr. Elmer E. Stanton, the concrete engineer, who has lately removed from Brooklyn to Schenectady, N. Y., where he is conducting his concrete-stone and construction business, together with his sand-lime-brick system, is having great success in his new location. He is getting business from all over the State and has two plants, both of the American Concrete Stone Co., running at full capacity. Inquiries are coming in daily, and he reports that the interest up the State in both concrete stone and sand-lime brick is widespread and increasing.

In discussing the general status of the sand-lime brick industry, Mr. J. C. Curtin, Eastern representative of the American Sand-Lime Brick Co., 39 Cortlandt Street, gave the information that the demand for their sand-lime brick plants is steadily increasing and the parties desiring to go into this line of business are getting rapidly educated up and are seeking, regardless of cost, a better equipment than they have heretofore got from some of the various systems in the field. Hence the great amount of new business that they are doing, due to the fact of the success of the plants now in operation built by his company.

Hollow Building Blocks.

The Noyes F. Palmer Manufacturing Co., 150 Snediker Avenue, Brooklyn, has issued a new catalogue of their adjustable cast-stove presses. It is the second edition, 1904, and is a mass of interesting and practical information from cover to cover, and the price of it is \$1.00. It gives illustrations of all the various blocks the machines can turn out, from 2-inch ones up. It also illustrates all the processes in making and storing of the stones, so that they can readily be comprehended without any detailed explanations. It includes the results of some scientific tests, compiled with great care and exactness, and it is a publication designed for engineers and advanced users of these blocks. It contains views of a number of buildings made with these blocks, but when an inquirer is within easy distance of New York Mr. Palmer does better—he sends him to near-by points in Brooklyn where he can see finished houses in ornamental style, composed entirely of these blocks, and others that are being constructed of them, and also to the factory and yard, where he can see them in process of manufacture, made by people who were utter strangers to Mr. Palmer when they took up the business, and who after trying various machines and presses, now use the N. F. Palmer Machine exclusively. One of these houses, in Queen Anne style, may be seen on E. Fourteenth Street near Avenue C in Brooklyn, and, strange to relate, not four blocks away is a Queen Anne basement, constructed with blocks from another style of block machine, that the contractor got disgusted with, and it is on his hands yet as the customer refused to accept it.

Mr. D. P. Caritte, of the United States Drying Engineering Co., 66 Beaver St., says that from the results of his observation, during an extended trip through the West, he thinks that neither Rock Products, as much as it follows the subject up, nor any other paper has realized the extent to which the sand-lime brick business has taken hold in the West. It has reached the proportions of a regular craze, as has also the composition stone industry. Towns, big and small, are going into both lines with the greatest ardor. In one town of three thousand inhabitants in Kansas they were turning out sand-lime bricks and building blocks in immense quantities, using German cement that came as ballast by way of the great lakes—and on the main street he ran across an old college friend running a line of sewers, and making the concrete pipes there at the roadside with the sand and gravel from the excavation, putting the pipes down where the raw material came from, and he called attention to the fact that whereas these conduits a few years ago had to be ordered from the nearest large center, now all these small towns are making them themselves, together with their sand-lime bricks and building blocks.

Mr. Scott, of the New York Cement-stone Co., Flatiron Building, reports city business to be somewhat quiet, owing to the strikes, but out of town business is very good, and orders are coming in very well for the cement-stone for both inside and outside work, and the knowledge of, and demand for, the product are steadily increasing.

State Business Dull.

Mr. Kirtland, of 1123 Broadway, who has just returned from a visit to the slate districts, reports that the mills were running slower than some time ago, although a little better than for the past two months. They all have enough to keep them quietly going, but the conditions are vastly different from those of a year ago when the mills were so rushed that they could not deliver and were taking no more short time orders. Now they are ready to take such orders and fill them with promptness. The roofing slate business is unusually slow, and some of the Pennsylvania mills had shut down on that production. His personal business has kept along fairly, although much hampered by the strike question, an example of which was instanced in the case of receiving an order on which he was allowed four months time, but when the strike conditions set in, he received word that his time might be extended to eight months.

Mr. Arthur Wells, St. James Building, said the slate business in town was quiet, owing to the interruptions to business by the labor troubles. Outside business, however, was pretty fair, and contracts had come along freely to fill the void in the city trade and there were also some good export orders. Mr. Wells' foreman has taken advantage of the lull in city work to run up to Vermont and will make a tour through the slate quarries in New England.

FRIENDLY CHAT WITH MACHINE MEN.

The Ingersoll-Sergeant Drill Co., 26 Cortlandt Street, has issued a very interesting 4-page leaflet, with cover, giving some data and figures relative to the comparative cost of the steam method as compared with that of a compressed air plant installed by them in the North Amherst, Ohio, quarry of the Cleveland Stone Co. The computations are gone into with very great care and exactness and afford a fair comparison of the two systems as used there. The two illustrations tell their story without words. One shows the quarry in operation under the old system, almost its entire length being heavily obscured by steam and smoke. The other shows it under the operation of the compressed air plant, and no printed comment is necessary. It is entitled, "Before and After," and they can be had by sending to the company for them.

The American Air Compressor Works, 26 Cortlandt Street, has installed its air compressors in the Lewiston Monumental Works, Lewiston, Me.; also in the works of the Excelsior Granite Co., near Malvern, Pa., and in the Massachusetts Granite Co., of Cambridgeport, Mass. They are also installing their compressors in the big new hotel in Philadelphia, the Bellevue-Stratford, and also in the Chicago postoffice, and are furnishing a complete pneumatic tool plant to the Rabb Iron Works in Brooklyn. The company has been extremely busy for the past month working days, nights and Sundays to catch up with orders and get off their shipments.

Mr. F. B. Vail, of the American Air Compressor Works, 26 Cortlandt Street, will go on a vacation on the first of September which will include a three-day lake trip from Buffalo to Chicago and a visit to St. Louis, making a trip of two to three weeks' duration.

Business was very good at H. G. Kotten's, 120 Liberty Street. They are working 135 men on double time and are unable to keep up with orders for their stone working machines and tools. On the manager's desk was lying an order, just received, for twenty-four large crane surfacing machines and thirty of the latest improved plug drillers, amounting to \$16,800.00.

Mr. H. G. Kotten is at Carlsbad, Germany, with his wife, resting and recuperating at the famed Carlsbad Springs and baths.

Mr. Jules C. George, representing the Manhattan Tool Co., successor to the American Tool Co., is out on a three weeks' trip amongst the stone trade throughout the entire New England

district. Mr. George is a good mechanic, and is thoroughly acquainted with pneumatic tools and with the Manhattan Co.'s tools in particular, with which he has been connected for three years, and is fully able to make any kind of practical demonstration of them. Mr. Vernam is already well pleased with the results of his trip.

At the Wood Drill Works, Paterson, N. J., Mr. Wood reported very good business, with a large number of orders for rock drills from the Rocky Mountain district. The shops are running to their utmost capacity in endeavoring to keep up with orders. Mr. Wood was very busy getting his big five seated auto. in shape for a two weeks run through the State, which will be his vacation. After a long and careful study of all the machines, domestic and foreign, aided by his ability as a mechanic and machinist, he decided on a Knox, and has never repented of his choice. In no instance has it ever failed to get him home all right, and it had become such a common thing for him to help others home that at first he carried a substantial towing rope as a regular part of his equipment, but after a great number of such experiences he got tired of working for careless and lazy people who won't take the trouble to see that their machine is in trim before going out, and he left his tow rope at home; but he is always ready to give the benefit of his mechanical skill to any one suffering from an unavoidable break-down, and the more experience he has in such instances, covering a great variety of makes, the more he is satisfied with his own machine. After getting well tired of pulling out nails and repairing punctures, he put on a pair of solid rubber rear tires at a cost of \$170.00 and he says they have repaid him many times over. All the resiliency of the pneumatic tire is there, while he goes over the worst roads with an easy mind. Everything about the machine is designed, and added to by him, for comfort; which, however, does not prevent his getting out of it all the speed there is in it when the conditions are right and convenient. He expects to return about September 15.

The Pulsometer Pump Co., Whitehall Building, N. Y., has installed one of their improved pattern pumps which is used for cleaning out the water works pump pit of the Tupelo, Miss., Water works. Pumps for this purpose are frequently operated in a submerged position, and are called upon to handle a very large percentage of mud, grit and quicksand, which the Pulsometer does without the slightest injury to its mechanism, and the pump above referred to, now installed there, has been thoroughly tried and been accepted for that exceedingly severe service.

Mr. Henry H. Witherspoon, the well known compressed fuel expert and engineer, who has recently thoroughly examined the methods of making compressed bog fuel in Germany, Denmark and other countries of Europe, is now connected with the Peatkoal Co., of 30 Broad Street, New York, as their chief engineer. The company's factory is at the foot of Morgan Street in New Rochelle, N. Y.

Bituminous Macadam.

A writer of the Elmira (N. Y.) *Advertiser*, says: "The only thing against this pavement is its name, for the reason that it seems to be something new, although it has been used largely in Canada and in the middle West, and it is said to have proven far superior to asphalt paving. The method of laying the bituminous macadam for paving may be described as follows: The top of the road is taken off, the street is then thoroughly rolled with a large steam roller, then six inches of broken stone is placed thereon and rolled down to 4½ inches. On the top of this is placed 2½ inches of top dressing composed of small trap rock, sand, powdered limestone, asphalt tar and mineral oil, mixed and heated to 200 degrees. This is rolled and when finished has every appearance of asphalt paving with much greater wearing qualities. It never crumbles in spots such as are so often seen where asphalt is used."

Charles A. Lockard, general manager of the Empire Portland Cement Co., of Syracuse, N. Y., says that the cement trade has been very dull this season, but sufficient stock has been accumulated to take care of the business offered, so the works at Warner have been closed for the present.

SYRACUSE, NEW YORK.

SYRACUSE, N. Y., August 22.—Seven cement manufacturing companies of this section have petitioned the State Canal Board to provide that, in the construction of the new barge canal to run across the State, the cement manufactured in New York shall be given preference over that manufactured in other States. Charles H. Ramsey, assistant general manager of the Helderberg Cement Co., of Albany, recently appeared before the board stating that \$15,000,000.00 was invested in cement works in New York State, and only six per cent. of the total output of the United States is produced here. There is plenty of raw material, he said, and the industries of this State should be fostered. The petition presented by the cement companies is as follows:

"There are several millions of capital invested in the manufacture of Portland cement in this State. This investment yields to the State directly by taxation a large revenue, while the employment by the various cement companies of thousands of workmen, affords a home market for the farmers and manufacturers within the borders of the State, thus yielding to it a large indirect revenue. In view of these facts we, the undersigned cement companies respectfully request that your board take such steps as may be within its power to provide that in the construction of the new barge canal the cement made within the State's boundaries shall be given preference over other cements, conditioned only that the quality and price shall be equal to these cements made without the State. [Signed]: The Helderberg Cement Co., T. Henry Dumary, president; Alsen's Portland Cement Co., Herman Baasch, treasurer; Glens Falls Portland Cement Co., W. W. McClay, president; Empire Portland Cement Co., Charles A. Lockard, manager; Wayland Portland Cement Co., V. F. Whitmore, president; Cayuga Lake Cement Co., M. E. Calkins, president; Thomas Millen Co., F. W. Millington, secretary."

The board will consider the petition.

Activity in Concrete Operations.

On account of the low price of cement an unusually large amount of cement work is being done this summer. The Onondaga Litholite Co. has laid more cement walks than in any previous time. George W. Pack & Son, agents for Hudson cement, have received several large shipments by canal and are selling it as fast as they can get it.

The Mohawk Portland Cement Co. is trying to sell an issue of \$150,000.00 six per cent. bonds with the idea in view of raising capital to revive the business of the old Warner's Portland Cement Co. The plant of this company has not been running for two or three years. Besides the plant the property consists of a number of acres of marl deposits.

The Watertown Sand Brick Co. have their plant at Sandfords in fine running order and are turning out 12,000 brick per day. It is expected that in a short time it will be running at its full capacity which is 27,000 per day.

The Gillette Skirt Co., of Cortland, recently manufactured some cement blocks to be used in the construction of their new factory. These blocks proved so popular that the company will continue to manufacture them for other people. They have already supplied blocks for several buildings.

Monumental Marble.

The Rylstone Marble Co. is about to begin operations on the Norton farm near Watertown. The concern was incorporated a year ago with a capital of \$115,000.00 with these officers: Frank N. Norton, president; Fred H. Norton, vice president; Ralph N. Bast, secretary; James S. Tibby, treasurer; R. C. Gonderman, superintendent. Eight modern gangs of saws have been installed ready for operation, and two more will be added later. Motive power is furnished by a 150 h. p. Fishkill-Corfliss Engine made by the Brownell Co., of Dayton, Ohio. The quarry is an immense ledge back of the mill and rising high above it. Instead of the usual derrick for hoisting, a car traveling back and forth on an overhead steel cable will be used. One end of this cable is buried deeply in solid rock at the rear of the quarry, and the other end is carried over the top of a tall, strongly built tower at the

ROCK PRODUCTS.

side of the mill, and from thence down into the mill where it is anchored 22 feet below the surface of the ground. The hoisting drum is located near this anchorage in the mill and from this another steel rope will be run to this overhead car and this one will do the actual lifting and hauling the stone under the main cable for a distance of 100 feet each aside. Under the cable is a track. Fifteen tons of stone can be hoisted up to the main cable and run forward directly over the waiting car upon which it is lowered. The blocks are sawed on the cars, after which the cars are hauled out and the slab removed. This is a great saving in yard room as well as team work, etc.

The buildings of the Gouverneur Marble Co., which were completely destroyed by fire the latter part of last month will probably be rebuilt at once. The loss was \$80,000.00. The business was in a prosperous condition and had many orders ahead. About forty men have been thrown out of employment.

John H. Cross, of Rome, has removed his granite and marble business to his new store, No. 138 North Washington Street.

George W. Pack & Son have just received several canal shipments of cement from the plant of the Hudson Portland Cement Co. The price at present is \$1.35 per barrel and the market is improving. There is a danger that the building labor troubles in New York City will injure the trade up State and decrease prices.

The Syracuse Mantel, Tile and Marble Co. has considerable work ahead, as has also the E. J. Stearns Co. Tile layers are paid 60 cents a day more than last year and the helpers are increased 20 cents a day.

The death of Thomas G. Doyle occurred recently. Mr. Doyle was a pioneer in the salt business and accumulated quite a fortune.

The Tully Pipe Co., an offshoot of the Solvay Process Co., has elected the following directors: W. B. Cogswell, R. G. Hazard, George E. Dana, E. N. Trump, O. V. Tracy and John L. King.

The Northern New York Marble Co., of Gouverneur, is now using a large force of men opening up their new quarries at the grounds four miles west of that town. The original quarry which was abandoned several years ago, and the pit now being operated will be connected by the present development work. There is said to be a large demand for building and monumental work.

New Dry Process Machinery.

J. J. Tonkin, manager of the Oil Well Supply Co., announces that a big plant for the manufacture of machinery for taking values out of ores by a dry process which does away with the use of water in mining operations, will soon be located in Oswego. The machinery is now being manufactured near New York City and will be installed in mines of which Mr. Tonkin is the owner. The process will revolutionize the system of extracting minerals from every kind of ore.

Aaron S. Fox, superintendent of the Onondaga Litholite Co., was married August 11 to Miss Lotte Bartlett.

The Moss Ridge Mining Co., of Watertown, has been incorporated with \$100,000.00 capital with these directors: Joseph Marlan, George O. Graham and James A. Moore, of Watertown. The company is formed for the purpose of mining and milling pyrites. The mine is located on the Fleming farm in the town of Dekalb, St. Lawrence County. The vein is 1,000 feet long with an inexhaustible supply of ore. The company has an option on the Starbuck & McCarthy sawmill which will be used as a concentrating mill where it is estimated that 100 tons of ore can be treated a day. The product of the mill will be sold to sulphuric acid manufacturers.

A. O. McMath & Son, of Herkimer, have an up-to-date monument works equipped with polishing and pneumatic tools.

H. R. Packard, of Clayton, of the firm of Packard & Kelly, marble cutters, died the fore part of the month after an illness of ten days.

The New York Central railroad, at Gouverneur, has completed a new platform at the eastern end of the freight house for the use of marble shippers.

D. W. Griffith, the monument dealer of Oneida, has erected a handsome Barre granite monument for Elisha G. Gay, in Quality Hill cemetery.

The village of Lyons has bought a stone crusher and sorter at a cost of \$1,150.00. Considerable paving will be done.

The Adirondack Pyrites Co. has finished its mill on the Cole farm near Gouverneur and is run-

ning at its full capacity. A daily output of from fifty to sixty tons is being washed and sorted.

Henry H. Hindshaw, assistant State geologist, has been examining the various minerals appearing in St. Lawrence County, giving particular attention to marble and granite. It was through his efforts that the exhibit of talc and marble was made at the St. Louis Exposition.

The village of Carthage has voted to spend \$8,000.00 for cement sidewalks.

Ex-Mayor John D. Higgins, of Oswego, will buy a stone crusher to crush the stone on his farm. He has offered to donate it to the city for paving purposes.

The city of Watertown has been having a great row about the kind of pavement to be used on State Street. The common council voted in favor of asphalt, but the mayor and several others thought bituminous macadam or bitulithic pavement was the proper thing. The mayor got up an excursion of property owners to go to Rome where some of the pavement was in use, and the delegation returned in favor of that kind of pavement.

The laying of the mile brick pavement in Wolf Street, Syracuse, has been commenced by Contractor Marnell.

Interstate Paving Co., has two large contracts for paving at Rome.

Robert Ballard, president of the National Pressed Brick Co., which has a factory at Belle Isle, died recently at his residence in this city. Mr. Ballard was formerly president of the Syracuse Pressed Brick Co., which had a plant on Midland Avenue. He served as alderman of the old Eleventh ward for five years. He was born in England, and was formerly in the construction department of the English railway.

Factory Street, Watertown, will be paved with Metropolitan block vitrified brick with concrete foundation. A. F. Nims, of Philadelphia, N. Y., has a contract at \$47,000.00.

The Binghamton common council has ordered a carload of small brick manufactured by the Park Paving Brick Co., purchased for experimental purposes. A part of a street will be resurfaced with these brick, asphalt having been used before. If the experiment gives satisfaction more of the same kind of work will be done.

The Cortland common council has voted to pave Clinton Avenue with brick at the cost of \$42,000.00.

J. P. Harvey, of Little Falls, has an up-to-date monument works at 606 Main Street.

THE TWIN CITIES.

MINNEAPOLIS, MINN., August 31.—As the building season advances there are several changes in the markets of building materials. Lumber is about the same in price, with a fair demand locally, but the sales throughout the Northwest are not up to last year. The cement block business seems to be cutting into various other materials, invading the field of brick more conspicuously. The concrete fireproofing business is also cutting in on the clay hollow tile work in many of the larger buildings of the Twin Cities. Common brick, Portland cement and structural steel are lower now than they have been for two years. Most of the brick yards at Chaska, Minn., have shut down with brick on hand and no orders. Some of the yards at Minneapolis, Mankato and Princeton are running light, although still in operation. The prices ruling are about \$6.25@\$6.75 per thousand. The only place in the Northwest where nice red brick are made is at Menominee, Wis., and the yards there are running. Both the Hydraulic and the Wisconsin Red Pressed Brick Co. are running full time, with a good quality of pressed and sand mould brick which are always in demand.

Portland cement, although largely used in building operations, can be bought in the open market cheaper than a month ago. Structural building steel is said to be ten per cent. cheaper than last spring. There have been very few large steel buildings or bridges erected in the Northwest this year, outside of Winnipeg, Man., which is the exception in all lines this year. They have taken out building permits for new buildings in that city from January 1 to July 1, aggregating over \$6,000,000.00. This included the large Canadian Pacific Railway depot and hotel building, costing over \$1,000,000.00, a large department store, and the new postoffice and customhouse. Concrete walls are being used in street viaduct work and foundations for all

buildings, also hollow cement blocks are coming into frequent use in Winnipeg for residence foundations.

The Concrete Machinery and Cement Co. are pushing work at their factory at Twenty-ninth Street and Nicolet Avenue, Minneapolis. This company is said to be the only one which makes a wet process hollow block from high grade Portland cement in the Northwest. They make not only the building blocks but sewer and drain pipe and even fence posts. The latter, when dry, can be painted easily with any color of paint and uses less than either wood, stone or brick. The superintendent of the factory tells your correspondent that he could place 100,000 cement blocks at once if he had them on hand. The company seeks to demonstrate the manufacture of these goods from machines rather than to engage in the general sale of these articles, as it sells these machines.

The Langdon Stone Co., of Minneapolis, is using some of its crushed blue stone mixed with Portland cement for the manufacture of hollow blocks.

Pure Reinforced Concrete Construction.

John Wunder has the general contract for the erection of the largest manufacturing and warehouse building in the Twin Cities for the Northwestern Knitting Co., of Minneapolis, on Western Avenue. The building is designed by Bertrand & Chamberlin, architects, of Minneapolis, and C. A. P. Turner, of Minneapolis, is the consulting engineer. The building will be of reinforced concrete construction throughout, being the first specimen of such construction which is exclusively reinforced concrete. Even the columns, beams, floors and ceilings will be of concrete, reinforced by steel rods, bars and bands. It is declared that this system of construction is more economical than protected steel and is quite as strong and thoroughly fireproof. Consulting Engineer Turner has introduced many improvements of his own patent in the construction, and claims that the building will be a saving in expense as against a steel frame building which will practically equal the cost of the structural steel. He says that tests have been made which show that this building, which will be a three-story warehouse, when completed, could be filled on every floor with sand up to the ceiling and still have strength to spare. While such floors seldom have a load of over 250 pounds to the square foot, it could sustain about 1,100 pounds to the square foot. All the columns, beams and floor slabs will be moulded on the site of the building around thin steel skeletons, designed to hold the concrete together rather than to carry the load. The strength of the structure is therefore to be entirely on the adhesion of the concrete. The building will be 80 feet front, by 185 feet deep, three stories high and basement. The cost of the building is placed at \$50,000.00.

Cement and Concrete Outlived the Cyclone.

A very noticeable feature of the cyclonic storm which passed over and through the Twin Cities the evening of August 20 was that very few brick and stone structures sustained any great damage. Particular notice has been drawn to the grain elevators, in that the cement, tile and steel tank structures escaped with nominal damage while several wood construction elevators were more or less damaged. Two or three of them had the entire tops blown off. None of the concrete or fireproof tiling cylinder style elevators were damaged. One of the noticeable freaks of the storm was its carrying away four spans of the "high bridge" in St. Paul. They were completely torn out and dumped into the river, being now only fit for scrap. One estimate places the damage to buildings in the Twin Cities at about \$500,000.00. This would seem to be rather low, when the extent of the entire damage to property is considered. St. Paul buildings suffered the worst, although there was also much damage sustained in Minneapolis.

New Minneapolis Work.

M. Schoemacher has the contract to erect a church for the German Baptist Society of North Minneapolis, on plans by Harry W. Jones, architect. It will cost \$10,000.00.

B. Cooper is erecting an addition to the Harvard Chambers apartment building at 24 South Tenth Street, to cost about \$15,000.00.

The John Leslie Paper Co., Minneapolis, will erect a modern wholesale warehouse at Third Ave. South and Fifth Street, across from the handsome granite Court House and City Hall. The warehouse will be four stories, 50x165, of mill construction, and will cost \$50,000.00. Bertrand & Chamberlin, architects.

C. W. Herrick, of Minneapolis, has had work begun on the day on a handsome brick veneered residence at 1941 South Irving Avenue. A. L. Dorr, architect.

An additional story is being built to the fire-proof warehouse of the Realty Co., at First Avenue North and First Street, Minneapolis, 44x119 feet in size, to cost \$8,000.00. Cass Gilbert, architect.

Harry G. Carter, the Minneapolis theatre architect, is preparing plans for a handsome theatre and store building to be erected at Traer, Iowa. It will be of pressed brick and will cost about \$20,000.00. Bids will be taken at Traer about the middle of the month.

The contract for the Carnegie library building at Morris, Minn., was awarded to F. A. Hancock, of that town, at \$8,369.00. Sedgwick & Saxton, architects, Minneapolis.

The Fisher Paper Box Co., of Minneapolis, has just acquired a site on First Street North, between First and Second Avenues North, and will erect a three-story factory building there, it is understood.

New Work in St. Paul.

Newman & Hoy, of St. Paul, secured the excavation work for the new wholesale warehouse, to be erected by Farwell, Ozmun, Kirk & Co., of St. Paul. It will be about 80x125 feet in size, six stories high, and will contain the most modern equipment and construction used in wholesale warehouses. The building will cost complete \$200,000.00 and will be a handsome addition to the many handsome structures in the wholesale district of St. Paul. Louis Lockwood, architect, St. Paul.

Booth & Erickson, of Merriam Park, secured the general contract to erect the Hunter Doll apartment building on Dayton and Kent Streets, St. Paul. It will be 46x80 feet in size, two-story and basement, of brick and cut stone, with all modern fittings. It will cost \$12,000.00.

The Northern Cooperage Co., of St. Paul Park, is erecting a frame factory, and patent dry kiln with repairs after fire, costing complete about \$10,000.00.

Lauer Bros. have the general contract to erect Gebhard Bohn's modern residence on Summit Avenue near Grotto, St. Paul. It will be of pressed brick and cut stone, two and one-half stories, 54x42, with elaborate decorations and finishings. Cost, \$20,000.00. Clarence H. Johnston, architect, St. Paul.

Jared Howe, of St. Paul, has plans by Louis Lockwood, architect, for a modern residence at Lawton and Oakland Avenues. It will be of pressed brick and cut stone, with modern interior work. Cost, \$9,000.00. Butler Bros. have the general contract work.

St. Agnes Catholic society, of Thomas and Kent Streets, St. Paul, has acquired a site at Kent and Lafond Streets, and will now erect an Assembly Hall. It will be of pressed brick and stone trimmings, and will seat 700 to 800 people. The congregation will erect a church later to cost \$75,000.00.

Omeyer & Thorl, architects, of St. Paul, have plans for a brick veneered school building for Abbottsford, Wis. Cost about \$12,000.00.

General Northwestern News.

The New Ulm Stone Co., of New Ulm, Minn., is erecting an engine house and a crusher shed at its new quarry at Redstone, near New Ulm. The company is preparing to get out a superior red-stone there, it being the only redstone to be found in that part of the State.

Chippewa Falls, Wis., is enjoying a prosperous building season, its total work in site or under way at the present time being figured at about three-quarters of a million.

The Manawa Portland Cement Co., recently formed at Manawa, Wis., has extensive marl beds six miles north from Manawa, and is preparing to engage in the manufacture of cement. The company has elected officers as follows: President, Neil Gunsten; vice president and general manager, E. Vernon; treasurer, C. O. Crostue, secretary, C. H. Anderson.

The Middle River Brownstone Co., with quarries near Wentworth, a few miles from Superior, Wis., is shipping from one to five cars of stone a day.

Fremont Ward has been named as superintendent of the construction of the government building to be built for Deadwood, S. D.

Work has been started at Winnipeg, Man., for the construction of three miles of large oval sewer, ranging from four to eight feet on the basis of a diameter, and from sixteen to thirty feet in depth.

A sewer machine is to be used for the work, which will cost about \$200,000.00.

F. I. Crane will double the output of cement blocks at his factory at Austin, Minn., as soon as the additional machinery arrives.

The Perry Concrete Stone Co., of Perry, Iowa, has been incorporated with \$25,000.00 capital stock, D. D. McColl is president and H. C. Modlin is secretary.

The warehouse of Fowler & Pay, between St. Paul and Minneapolis, was badly damaged in the storm of August 20. It was well filled with lime and cement.

N. W. Warren, of Austin, Minn., has perfected a concrete block machine which he claims will turn out a perfect block. He will take out a patent upon it.

Renville, Minn., is to have a concrete block factory, to be established by people from Waterloo, Iowa, and local capital.

The Bloomington Hollow Wall, Concrete and Improvement Co., of Bloomington, Neb., has been formed with a capital stock of \$5,000.00. The incorporators are: G. W. Green, J. B. Summer and J. B. McGrew, all of Bloomington.

John G. Bryant, of Milwaukee, has been named receiver for the Western Consolidated Granite Co., organized in 1902, under the laws of Illinois. The company has quarries at various points in Wisconsin, including Benton, Waupaca, Utley, Aberdeen, Devils Lake and Montello. Its bonds have been in arrears.

Ryan & Dettman propose to engage in the production of cement building blocks at Howard, S. D.

Alfred Lindsay and Carl Schultz, of De Smet, S. D., will begin the manufacture of concrete blocks.

Harrison Miller has had an elaborate mausoleum erected near Dale, Wis., of cement blocks, with inscription stones of granite. The roof is of cement and crushed stone and the doors are of plate glass and marble. The building bears the Masonic emblem and states that Mr. Miller joined the order in 1854.

The sewer engineer of Minneapolis, Carl Ilstrup, reports that steel and concrete construction for sewers have proved a great success.

The Yankton Portland Cement Works, of Yankton, S. D., have installed four new process rotary kilns which produce cement at a faster rate than the old plant, using an improved process.

B. A. Leighton and John S. Lindsay, at Escanaba, Mich., have machinery en route for the production of cement brick.

A superior clay for the production of pressed brick is said to have been discovered near Mandan, N. D. Tests have shown that superior pressed brick can be made from the clay.

The Hammond Building Block Co. has been formed at Hammond, Minn.

CHICAGO, ILLINOIS.

CHICAGO, ILL., August 27.—Building operations are in such a prosperous condition in this city at this time that they command especial attention, and it is believed that they will continue to show marked improvement from this on until the close of the season, notwithstanding the high figures of the year thus far. All persons engaged in this great industry are congratulating themselves over the general pacific conditions among the laborers, leaving the work to proceed unhampered by strike troubles similar to those troubling the building associations in New York. The down-town section in the city is undergoing a most wonderful transformation; tall skyscrapers are numerous and are now nearing exterior completion, the great First National Bank Building, eighteen stories in height, at the northwest corner of Dearborn and Monroe Streets, is now ready for the roof, and is by far the most notable and conspicuous among them all. Part of this enormous structure was completed in May last, and the remaining half will be fully ready for occupancy by the first of May next. It is most solidly and substantially built, its entire foundations resting on concrete columns sunk in the earth to bed rock, at depths varying from 75 feet to 125 feet.

The Growing Use of Concrete.

It is noticeable in the erection of all massive buildings erected here during this season that all of them rest securely and solidly on concrete foun-

dations. There can be no question about the solidity and endurance of such structures. They are mostly built according to the French plan—concrete being used in many parts of the structure which heretofore was not used. The great post-office building here, which was commenced over ten years ago, and is still uncompleted, rests upon a foundation of piling. Now piling is no longer used here for such purposes. The architects have eliminated it from their plans and substituted concrete, going down to bed rock in all instances where buildings are to be tall and massive. The new Majestic theatre now in process of construction on Monroe Street, between State and Dearborn, is to rest on concrete piers of enormous size and strength. There will be seventeen of them, sunk to a depth of from 100 to 115 feet to the solid rock, and each pier will require from 800 to 1,000 cubic yards of concrete. These castings or piers will be 10 feet in diameter. A foundation of this kind will endure forever, builders say. The concrete trade of this city has received a most wonderful impetus from this growing use of concrete, and the business has added immensely to the use of broken stone, sand and cement. All those engaged in these three branches of the trade say that their business has been greatly enlarged during the present year from the new method now in vogue, and piling has been relegated to the past as one of the old methods, considered very useful in its day.

The Advance in Prices of Building Supplies.

As a consequence of the large building operations going on, and the rush work to get the roof on before frost sets in, the lime, cement and broken stone industries have been very active during the two past summer months. Happily there is peace in those trades, except in New York, where neither contractors nor unions appear to be able to keep agreements they make. The increased activity in building here has caused a considerable jump in the cost of building materials, and at this writing other advances are expected. Bricks are now selling at \$8.00 a thousand, or \$7.20 if paid for within a fixed period. Lime is firmer and is now quoted at from 75 to 80 cents per barrel, while a year ago it brought only 50 cents. The lime kilns are all busy turning out the product, although it may be said that a few are not running full handed. Rubble stone which brought \$10.00 a year ago, now brings \$12.00 a cord, and the stone crushing plants in and near this city are all doing full time. The demand for rubble stone has increased enormously of late, and it is no wonder that so many new stone crushing plants have started up during the present seasons. In this vicinity several new stone quarries have opened up expressly for the purpose of meeting the demand for crushed stone.

Activity at the Brick Yards.

The brick industries here are flourishing and all the yards are in active operation, working a full compliment of men. The demand for brick has advanced so fast it is with difficulty that orders can be supplied. Bricks, as they are now made, are smaller than they were formerly, hence it requires a greater number to do the required amount of work. The "brick trust" received a set back when it was decided to build the new \$750,000.00 Ninety-fifth Street sewer out of cement instead of brick, at a large saving to the city in the difference of the cost as between the use of the two materials. The saving will amount to fully \$100,000.00.

Working on the Street Paving Problem.

The board of local improvements here is now experimenting with three new kinds of street paving—creosoted wooden block, brick with cement joints, and a combination of crushed stone, asphalt and cement. The cost of the wooden blocks is almost the same as the asphalt. The brick is being put down by the Terre Haute (Ind.) concern, which manufactures it, and is an experimental half block. The brick manufacturers say the reason ordinary brick pavement wears out is that it chips off at the end of the pieces. The new plan is to lay sharp cornered vitrified brick, bound together by Portland cement and sand, which will present a surface with no edges. Its cost also is approximately that of asphalt. The combination pavement, called "bitulitic" is composed of a layer of coarse crushed stone, with a top dressing of finer stone, bound together with asphalt and cement. While costing the same, it is said to be waterproof, noiseless and much more durable than asphalt. The crushed

ROCK PRODUCTS.

stone men and others are to watch the proposed experiments, seeking to profit by them if they are successful.

Chicago's Concrete Dock.

The masonry work of the great concrete dock between Randolph and Madison Streets, is now just finished, and cement and concrete dealers declare it is a splendid piece of work, and say that it is one of a few of its kind that will last for all time, there being instances where similar docks in continental cities have lasted 2,000 years. An enormous amount of concrete has been used in its construction, and is another evidence of the great demand for sand, crushed stone and cement for constructing work of this character. The concrete mixers now in such general use have greatly facilitated the work. Prominent among these is the Smith concrete mixer, which stands in high favor, the Contractors' Supply and Equipment Co., 232 Fifth Avenue, having sold nearly 300 of these machines so far this season. It is a great success, as by their use the work of preparing the concrete is greatly facilitated and the work is done by a marked decrease in the number of men employed.

Promising Future in the Building Line.

William H. Barry, the well known builder in this city, is now engaged in one of the largest house building projects ever undertaken on the north side. It involves the construction of 104 buildings, at an estimated cost of \$1,500,000.00. This simply shows that the outlook for building is good here and that prospects have not been so bright for years. Twenty-four buildings are now in course of construction, and the remainder will be finished in about three years. In almost every city in the country there has been a gain in the number of building permits issued. The stone, cement and concrete men say the future looks promising, marked improvement is shown here in building enterprises over the apathy which has prevailed for the past two months. There is renewed interest in the construction of apartment houses and buildings of a public character.

The Illinois Brick Co. has declared a dividend of 2 per cent. on the preferred stock. As far as the writer could learn the declaration covered no specified time, and was of no particular period of earnings. The last previous dividend was paid January 15, 1903. As the preferred stock is 6 per cent., the company is in arrears that amount for last year and is now 1 per cent. in arrears for the current half of 1904. Prior to January 15, 1903, dividends of 3 per cent. were paid semi-annually.

Trouble in Store for Marble Men.

The marble industries here have been doing a fine business so far the past season. All of them have had to do rush work to meet their contracts. The large number of fine buildings going up has drawn heavily on the resources of the marble proprietors, and there has been a good deal of sharp competition among them, the Vermont marble work proving to be one of the most active competitors in the field. Just now the marble cutters' and setters' union has drawn up a new wage scale to be submitted to the employers. The new scale demands \$4.00 a day and eight hours' work for both outside and inside work. The wages paid have been \$4.00 a day for outside work and from \$3.50 to \$3.75 a day for inside work, a day being nine hours. If the terms are not acceded to there may be trouble in the yards.

The trade war between the United States Steel corporation and the independent companies has had a beneficial effect—the reduction of prices by the dissolution of the billet pool and all other steel pools, and has given a great deal of satisfaction to building men and contractors who now expect to profit by a reduction in prices of material to be used in constructing buildings. The decline in wire nails \$4.00 in itself is a big thing. The slashing of prices may demoralize the dividends of the United States Steel corporation, but it is a good thing for the iron and steel industry, and for business generally. Building has been discouraged and manufacturers and others have been greatly hampered by the artificial prices of last year.

The gravel business has been looking up of late, and the dealers and owners of gravel pits have been having a pretty busy time. The Chicago Gravel Co. has been working all of its pits seven days a week, and is still keeping it up. Mr. Renwick, the manager, is on the whole satisfied with the situation. Other dealers in gravel report an equally good business doing.

Doing a Rushing Business.

The Sand-Limestone Brick Co., through their agent here, report continued progress and extension of their business during the last month. A new plant has been built at Pensacola, Fla., which is turning out 20,000 brick daily. These brick are almost a pure white and resemble marble closely. Another plant, of like capacity, is doing a fine business at Mobile, Ala., and is located on the shores of Mobile Bay. Still another plant, of like capacity, is in operation at Daleville, Ind., using a fine quality of bank sand found there, and which turns out a fine brick almost white. The manager reports that the company is simply overrun with business.

Washing Crushed Stone.

Mr. George Patnoe, general superintendent of the Toledo Stone and Glass Sand Co., Toledo, Ohio, was in the city yesterday looking up some more machinery for their limestone crushing plant and their glass sand mill. He reports business very large this season, and says they are shipping at the present time about 1,500 tons of crushed stone per day for railroad ballast, concrete and country road work. His company is one of the largest crushed stone plants in Ohio, and is unique in one feature—they wash every yard of stone they turn out, making a perfect product. This enables them to get a higher price than their competitors and makes the results very satisfactory to all concerned. The firm is producing about 300 tons of finished, washed dyed glass sand of the highest quality, and are about to increase their capacity to 600 tons. Mr. James J. Robinson, the founder and principal stockholder in the above company, is one of the best known and most popular bankers and all-round business men in Toledo.

Some Important Current Transactions.

James Clancey, the popular superintendent of the Lake Superior mines of the United States Steel Co., at Ishpeming, Mich., was in the city last week in his capacity as a member of the Board of Public Works of that city. He came to buy a new power plant for the city crushing outfit. Some disgruntled politician or discharged city employe put a charge of dynamite under the old engine and blew it skyward. He purchased his machinery from the Contractors' Supply & Equipment Co., 232 Fifth St.

Mr. J. A. Schneider, of Schneider Bros., Defiance, Ohio, was in Chicago a few days ago looking up some supplies for his crushing plant. He reports business good and the outlook for the next year splendid in the crushed stone line. He has put in a lot of crushed stone this season in bridge abutments and road work.

Mr. A. W. Mank, of Rockford, Ohio, was in town recently and reports the crushed stone business in a prosperous condition in his vicinity; in fact he has been running his crushed stone plant twelve hours per day all summer.

G. C. Hodgson, of H. E. Talbot & Co., Dayton, Ohio, was here a day or two ago, on his way to the Sioux to look after some of their work at that point. The company expects to put in quite a large amount of concrete this fall at that point and were looking for another Smith concrete mixer.

Mr. George C. Marsh, for the past eight or ten years manager of the crushing department for the Gates' Iron Works and their successors, the Allis-Chalmers Co., resigned his position on the first of this month, and will hereafter devote his entire time to his own interests with the Contractors' Supply and Equipment Co., of which he was one of the founders, present treasurer and a large stockholder. Mr. Marsh is widely and most favorably known to a large circle of men throughout the country engaged in the stone crushing business. He is an authority in all matters pertaining to that business, and is exceedingly popular among all men whose business relations have fortunately brought them in close contact with him. These relations will continue to exist and grow to a still wider circle, benefitting mutually all who may be so fortunate as to enter into business relations with him, in a business closely akin to the one he has made himself a complete master of during his able service of years with one of the largest and best known machinery houses in the world.

Amos T. Griffin, who came from Maine to Chicago more than sixty years ago, died in this city a few days ago at his home, 5942 Calumet Avenue. He had during many years owned and controlled the clay industries, which principally support the town of Utica, Ill. He had a wide circle of acquaintances and friends and was a member of the Union League Club.

NASHVILLE AND THE SOUTHEAST.

NASHVILLE, TENN., August 25.—Quite a good deal is going on in Nashville and Middle Tennessee with rock products companies. New organizations and reorganizations are prolific and the trade situation holds good. Much building and construction work is going at this time about Nashville.

The Tennessee Hydrated Lime Co. has lately completed and put in operation its plant for manufacturing hydrated lime under the Dodge patent. The site of the plant is on the Cumberland River front near the corner of Wharf Avenue and Fillmore Street. Automatic dumping cars convey the broken stone on a track with a slightly declining grade from the quarry to the tops of two large, very substantially built kilns, 16x16 and 30 feet high. After going through the pulverizing process the material is carried through galvanized pipes into strong paper sacks and loaded them onto cars of the Tennessee Central railroad siding. The company is capitalized at \$25,000.00. J. J. Ferguson is president and J. M. Wilkerson, secretary and treasurer.

The Tennessee Portland Cement Co. is the name of a new concern that will have its general offices in Nashville and that will erect a plant in the Cumberland mountains sixty miles from Nashville on the McMinnville branch of the Nashville, Chattanooga and St. Louis railroad. The manufacturing plant will have a capacity of fifteen cars per day. R. T. Van Valkenburg, of LaPorte, Ind., is the promoter of the enterprise. Mr. Van Valkenburg was formerly general manager of the Toledo Portland Cement Co. Capital from Boston, New York and Cleveland will be invested in the Tennessee plant.

At Bristol, Tenn., Adams Bros. Co. have closed a deal for a tract of fine building clay in the northwestern suburbs of Bristol, and will establish a modern brick plant with a capacity of 7,000,000 brick annually. The cost of the construction of the necessary buildings and the fitting of them with machinery will be more than \$10,000.00.

New Marble Concern at Knoxville.

Connecticut capitalists will invest \$200,000.00 in a new marble company at Knoxville. A charter has been filed there for the same under the name of the Victoria Marble Co., J. W. Strokeyweather, of Hartford, Conn., is at the head of the company. Several Knoxville parties are interested. Marble lands have been purchased near Knoxville.

J. J. Hennebique, of the Hennebique Construction Co., is making a Southern tour to introduce the Hennebique system of armored concrete as a material for use in the construction of buildings. The system was invented by his father who resides in Paris, France. It has been used in New York, St. Louis, Philadelphia, Boston, Buffalo, Cincinnati, Cleveland and Mobile, in all of which cities his company has branch offices except the latter. The gentleman has lately visited New Orleans with a view to putting in a branch there. He visited many architects in the New Orleans district and at Mobile secured the contract for the foundation and floors of the City Bank and Trust Co., and for foundation for the T. J. Bush Grocery Co.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., August 24.—The market here at Memphis and other points in the Southwest has been rather weak. Rock Products' correspondent learns, in so far as the price situation is considered, relatively with the amount of material consumed, that there have been some very large contracts let right here in the Memphis District, and down through the Southwestern country, large contracts, governmental and municipal and private, should, it seems, have made better prices on materials.

Talking to Mr. Wright, of the Wright Lime and Cement Co., Rock Products' man was told that business had been loosening up in the cement and kindred lines. Mr. Wright said that this had passed all difficulties now, but recently those difficulties incident to the experimental stage. His company had just completed a handsome job out on Boyd Avenue, a modern residence in stone. Mr. Wright, when seen, was just about ready to start for Mt. Galen, Ohio, to ob-

serve the operation of some moulding machines that will be introduced as improvements to the Memphis Hydraulic Stone Co.'s works.

Arkansas.

A great deal is doing in rock product and associate lines in Arkansas these days. At Little Rock just now a force of nearly 200 men are at work on Arkansas' new million dollar capitol. The first stone of the basement story was set in position the latter part of July. The contractors say they will have the basement story completed by September 1. Sixteen cars of the Batesville stone have been dressed and cut and is ready to be laid.

I. P. Shelby has been let the contract at Pine Bluff to lay twenty-eight blocks of new pavement for \$57,000.00. The town to raise the money will levy no special tax outside the improved district. The pavement is to be vitrified brick and when finished will give Pine Bluff nearly five miles of paved street.

At Little Rock, the Arkansas Brick and Manufacturing Co. is exhibiting these days an interesting exhibit showing the ingredients of Atlas Portland cement. It is made from limestone and shale secured near the plant at Hannibal, Mo., and ground separately.

At Little Rock the Arkansas Rock Asphalt Co. have the contract to pave West Third Street. They are now mining asphalt on their Pike County property and will do so until enough material for the contract mentioned and the Oklahoma City job has been taken out. Col. Woodson, president of the company, has gone North this month to purchase paving machinery with which to do the work.

E. A. Gillett has sold his lime plant interests at Fayetteville, Ark., to James Mock, of Prairie Grove, Ark.

The Marble City Mining Co., of Marble City, Newton County, Ark., has filed an amendment to its charter, increasing its capital stock from \$120,000.00 to \$240,000.00. Chas. E. Stoaks, of Ft. Smith, Ark., is president of the company.

The Benton County Lime and Stone Co., of Bentonville, Ark., has been reorganized and incorporated and capitalized for \$20,000.00, with the following officers: F. H. Perry, president; F. F. Floyd, vice president; W. J. Doke, second vice president; C. D. Haney, secretary and treasurer.

Missouri.

The Vandalia Artificial Stone Co., of Vandalia, Mo., is erecting a plant near the electric light works of that town. The Ely Building, where this material is being used, will soon be completed. The company is receiving many inquiries in regard to this material, and the probability is that it will be used in many houses erected in that section this fall.

Arrangements have been made by the Phoenix Brick and Construction Co. to erect an asphalt plant at Third and Jackson Streets, St. Joseph, Mo. F. P. Halsey was in Boston recently arranging with Warren Bros. for the construction of the plant and the material and machinery is now being shipped to St. Joseph.

At Doniphan, Mo., M. J. Wathen and son Varner are preparing to put up a tiling factory of moderate proportions in the near future.

The Chillicothe Brick Co., of Chillicothe, Mo., has discovered that there is a large deposit of clay on its property that can be burned into a good quality of vitrified brick. This discovery probably will result in an effort on the part of the company to make brick suitable for paving purposes next spring. "The 250,000 brick we are now burning will meet with a ready market, that is what part of it we do not need to construct kilns," said F. B. Wheeler, secretary of the company. "We have no shale on our place but we have been assured that clay which underlies the surface four or five feet will make an excellent paving brick, it being entirely free from lime."

A new firm is in the lists at Hannibal, Mo., to manufacture cement blocks. This is Hamlin & Gardner, and they are finding a ready sale for their new but good line. H. G. Riggs, cashier of the Bank of Callao, in Macon County, has just given them a contract for cement blocks which he expects to put into a residence.

The Meek Brick and Tile Co., is a go, in the way of a new manufactory of promise at Utica, Mo. James F. Meek will be manager and the plant will be located on Siess Hill. Several side tracks will be put in by the C. B. and Q. railroad towards the plant. The machinery of the new concern will be installed and possibly put in operation before winter.

Kansas.

F. D. Jones and H. G. Calkins, of Kansas City, have been at Ottawa, Kan., showing a machine for the manufacture of brick from sand and cement, seeking to interest contractors. The bricks and blocks are made of one part of Iola Portland cement and four parts of sand. The block grows lighter in color as it dries out.

Within a short time a company for the manufacture of brick by a new process, and also for the manufacture of machinery to make the brick, will be placed in operation in Kansas City. The new company will be known as the Kansas City Twentieth Century Brick Co. It will represent a capital of \$725,000.00. Its capacity at the start will be 100,000 brick a day. A. E. Stillwell, president of the Kansas City, Mexico and Orient railroad is entitled to the credit for bringing the company to Kansas City. He himself will be one of the directors. Its president will be E. D. Steger, of Bonham, Texas, the inventor, U. S. Epperson, will be vice president and general manager. W. A. Williams will also be a member of the board of directors. The machinery for the new plant is beginning to arrive. Some of it will come from Germany. An experimental plant was placed in operation at Bonham, Texas, two years ago. Another plant will be started in Memphis in the near future.

The E. K. Taylor Manufacturing Co., of Gas City, Kan., has received notification of the shipment from Westerly, R. I., of the bulk of machinery for their new cement bag factory to be located in a large three-story brick building at Gas City.

The Coffeyville Vitrified Brick and Tile Co. is operating four plants now with a capacity of 400,000 building brick and 125,000 dry press face brick daily. The plants are at Independence, Kan., Coffeyville, Cherryvale and Chanute. The officers of the company are: A. C. Stich, president; W. H. Mahan, vice president and general manager; W. G. Buckles, treasurer.

Henry Shears is now operating a cement building block factory as a new industry for Hutchison, Kan. His factory is located at 221 and 223 East Sixth Street.

At Abilene, Kan., Kugler & Witt are manufacturing now cement stone of all kinds, shapes and styles for window caps, steps, etc.

Indian and Oklahoma Territories.

R. A. Blocker has made some additions and improvements to his brick kiln at Manette, O. T.

The gypsum plant near Watoga, in Romanose Canon, I. T., has changed hands partially. Cronkhite Bros. have sold their interests to C. A. Howell and Frank Ash, of Oklahoma City, O. T., for \$48,000.00. These purchasers have been engaged in the building stone business in Oklahoma City.

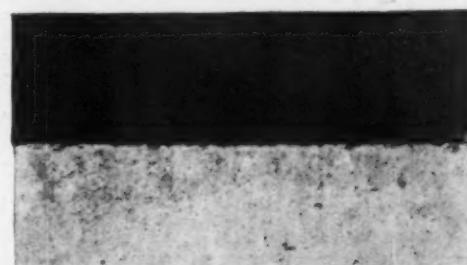
Texas.

The Waterloo Automatic Stone Manufacturing Co., of Waterloo, Iowa, is considering establishing a large plant at Dallas, Texas, for the manufacture of building stone. The plant will have a capacity of more than 20,000 brick per day. It is understood that the establishment has been practically decided upon.

St. Louis—The World's Fair City.

(Continued from Page 9.)

ably desire. It was placed in the hottest part of a kiln at the Mitchell Fire Brick Works at Cheltenham, St. Louis. The spot selected was the opening of the furnace pocket, or bag wall, where the flames from the furnace enter the kiln and at the same time the accumulated heat could get in its



Result of the Experiment Showing the Bricks.

work. The Mitchell Company's superintendent stated that a brick in that position was at a white heat all the time the kiln was in full fire. It must

be remembered that fire bricks were being burned. The sand-lime brick being once placed in position had to remain there, at any rate it was allowed to remain there, until the kiln was opened to take out the burned fire bricks. The brick that was subjected to this severe test is shown to have undergone no change whatever beyond that of being discolored. Its size is not altered in the least. I had Mr. Coleman place it on another sand-lime brick that had not been fire tested, so that I could make a photograph of the two. It will be seen that they are identically similar in size and shape.

This effectually disposes of the question of resistance to fire, but it raises another question: What is the matter with the sand-lime brick as a fire brick?

The point that commends this brick to the skilled bricklayer more than any other is the absolute absence of anything like distortion, no warping, no twisting, no swelling, no shrinking, but every brick like its fellow in size and shape. The bricklayer finds that there is a great saving in labor. He can make very much thinner joints and can carry an eighth of an inch joint without gauging.

The steam cylinder in which the sand-lime bricks are hardened is the equivalent of the kiln in which ordinary bricks are burned, but with this difference, that no matter in what part of the cylinder a brick may be the influence of the steam is the same. There is no difference in color, in size, nor in hardness. The action of the steam under pressure neither expands nor contracts the brick, it only solders the grains of sand together by converting lime into calcium silicate.

An obvious advantage of the steam hardening chamber over the brick kiln is that the steam chamber has to be in operation only as many hours as the kiln must be days. Besides this there is no handling from the press to the wagon or freight car. The sand-lime brick is taken off the press, placed on an Atlas steel car; this is run into the hardening cylinder, eight or ten hours later the car is run out with its load of bricks all ready to lay in the wall or to load into wagon or railroad car. There is no setting of a kiln nor emptying it, and no sorting for shades, nor culs.

There is no lack of testimonials; perhaps the one that carries the most weight is that of our consul at Leipzig, Brainard H. Warner, Jr., in his report No. 729, issued by our government at Washington. Mr. Warner had been instructed to investigate the new process of brickmaking, which was extending so rapidly in Germany. He did this very thoroughly and his report is strong testimony in favor of the new process. Mr. Warner calls it the "Limestone" brick, which is not the name adopted in this country. He was probably influenced by the German name: "Kalk-sand-Stein," but "stein" in that connection does not really mean stone, for the Germans commonly call a brick a stone. Mr. Warner's report concludes as follows:

"With the Schwarz Invention begins a new era in limestone-brick industry that will be of great importance in all countries, and particularly in regions where there is neither clay nor stone, but where there is plenty of sand. Signed:

BRAINARD H. WARNER, JR.
"U. S. Consul Leipzig."

ST. LOUIS BUILDING OPERATIONS.

There is a decided revival here in building. From August 1 to 26, permits for the estimated cost of new and repair work amounted to \$1,149,152.00, a considerable increase over August last year, which was only \$741,904.00 for the full month.

Some concrete work is being done by the Board of Public Improvement at the new City Hall, where a carriage drive is being put in on the Twelfth Street side.

At the court house too the worn and broken stone steps have been taken away and are being replaced with concrete. This is about a \$1,000.00 job.

A building at the corner of Lawton and Beaumont Avenues is being erected entirely of armored concrete. In addition to these jobs, considerable concrete work is being done for the foundations of small, two-story dwellings which formerly would have been of stone.

As stated in my last letter the renewed activity in building operations is due not only to the moderate price of building materials, but in greater part to a more practical rate of wages, and above all to the confidence investors have that the workmen will think for themselves and show good

ROCK PRODUCTS.

sense in their way of meeting the questions that affect them. The Master Builders' Association has decided to notify the carpenters of a reduction in wages from the present rate of 55 cents to 45 cents. The reduction to take effect on January 1, next. There is no doubt that other branches of the building trades will follow suit. It is anticipated that the unions will see the wisdom of not contesting the necessary reductions.

REPORTS FROM THE TRADE.

H. Marquardt Marble and Granite Co.: Business is rather more dull than usual, although not many orders are expected at this season. The principal difficulty met with is the railroad system of handling freight, holding goods for carload lots, then having the distributions made by transfer companies, which greatly increases the expense.

St. Louis Marble and Tile Co.: This company which does a business in finished marble and tiles has the contract for the interior marble work of the new City Hall, also of the City Hospital that is now being completed and the Union Electric Light and Power Co.'s plant. The Jefferson Hotel of this city, which was finished last spring, was one of the company's important jobs. Mr. W. C. Fox is manager and he says that business is now about normal.

Aetna Mosaic Co.: A mosaic pavement, the whole width of the sidewalk, has just been laid, in place of the usual granite, in front of No. 1006 Olive Street, for the Thiebes-Stierlin Music Co. It is a good looking piece of work and forms an effective advertisement. The word "Pianos" occupies the center of the space, with the name of the firm at each end. The decorative part is a simple Greek fret. The building itself is a new one, just completed in buff brick.

Acme Cement Plaster Co.: Trade has been fair during the past month and the outlook has greatly improved. This company has done rather better business than several others in consequence of the great extent of territory it covers, from the Atlantic to the Pacific.

Schumacher Building Stone Co.: This company has been in a quiescent state for some time past, but is now about to be reorganized. If this is done the Schumacher plastic cement will be pushed. There are four Schumacher patents, which will be taken over by the new company. Mr. W. E. Stokes will probably be at the head of the management.

St. Louis Vitrified and Fire Brick Co.: This company, of which Mr. Pauly is president, and Mr. F. W. Christmann secretary, finds business very satisfactory, with a sale for all its products. The company has just completed the material for eight lime kilns for a Chicago concern.

The Labor Question Among Marble Men.

During the past month the labor question, so far as the marble setters was concerned, became quite complicated. It appears that during the great pressure of work some time ago the union was quite unable to supply the demand for skilled workmen. A number of the helpers, who had been at work for years and were quite as competent as some of the recognized mechanics, did the work and did it satisfactorily. They applied for admission to the union, but this was refused them. They then formed an association of their own and trouble has been the result. A dispute about the employment of one of these former helpers ended in the walking delegate calling the union men out. The union then demanded that the employers should leave their association. Two of the firms, having considerable interests at stake, kissed the rod and resigned. The rest of the members of the association are under a boycott.

Very Successful Enterprise.

Arthur Watson, formerly of Cedar Falls, has established a cut stone establishment at Des Moines, Iowa, and is building up a splendid business, which is not surprising when his experience is taken into consideration, for he has been at cut stone work since he was twelve years of age as helper, rough stone trimmer, journeyman, workman, foreman and finally employer and contractor. He is a shining example of a young man who moulds his own opportunities, and carves out of the rough his own success. Last year Mr. Watson supplied all the cut stone used in the State work, and his plant is now busily engaged with a number of important jobs aggregating many thousand dollars.

THE QUAKER CITY.

PHILADELPHIA, September 1.—There has been but little change in the building situation and the trade in the various classes of building material during the last month. Activity has characterized building operations and business in most lines has been fairly good. The cement business is improving though there is no marked advance in price and nothing to indicate that there is to be one. The demand seems to have grown stronger and the cement trade is taking a hopeful view of the situation. Philadelphia has been comparatively free from labor troubles during the entire season. However there has recently been some misunderstanding in the marble trade, and work has been delayed by a strike of helpers and setters. Manufacturers say that virtually all marble work in buildings has been tied up. The employers refuse to recognize the Marble Workers' Union or to pay the 5 cents increase demanded for helpers.

"We practically locked our men out last fall," said one of the leading manufacturers affected by the strike. "Since then we have had an open shop. Our objection to the union's closed shop is only that the union will not allow the closed principle to work both ways."

There continues to be a large amount of work planned for the future. Permits are being taken out extensively for small residences and small business houses for manufacturing establishments. Much of this work will probably be gone in the fall if the season remains open, but doubtless a considerable part of it will go over for the next year.

The report of the Bureau of Building Inspection for the month of August shows that 747 permits for 1,168 operations at a cost of \$2,187,480.00 were issued. For the corresponding period of last year 670 permits for 1,042 operations at a cost of 1,895,895 were granted.

Koelle, Speth & Co., architects, are preparing plans for a brewing plant to cost \$175,000.00 for the Alpine Brewing Co., at Pittston. The buildings will consist of a brew house, stock house, wash house, boiler house, racking room, ice plant, engine and generator building and a heat, light and power plant. The buildings will cover an area 170x100 feet, and will be from one to five stories high. Estimates will be wanted in about two weeks.

The Wayne Construction Co. is taking subbids for twenty-six two-story dwellings at Tulpohocken and Morton Streets.

John Maddock will shortly begin the erection of 138 dwellings on a seven-acre plot purchased from the corporation of Haverford College, at Sixty-first Street and Lansdowne Avenue. The houses will all be two stories high, of brick.

Henry P. Schneider will break ground at once for an operation of fifty dwellings in the Forty-first ward for William and Jacob S. Disston that will involve an expenditure of \$54,000.00.

Five architects will submit preliminary plans for the office building for the Tradesmen's Trust Co., at the southeast corner of Juniper and Chestnut Streets.

William R. Dougherty is estimating on plans by Brockle & Hastings, architects, for an operation of fifty-three dwellings for Abel & Hendricks on Broad Street, Allegheny Avenue and Park Avenue, above Allegheny Avenue. The houses will all be three stories high, of brick and terra cotta, with porch fronts.

Ballinger & Perrot, architects, have invited estimates for a large fire-proof factory and power house for the Victor Talking Machine Co. The main building will be located at Front and Cooper Streets, Camden, north of the present factory, the power house to be in the rear.

Jacob Myers & Sons were granted a permit for a \$40,000.00 residence for Stanley G. Flagg, Jr., at 1723 Spruce Street. It will be four stories high, of stone, brick and terra cotta, to measure 20 by 103.9 feet. Plans are by John T. Windrim, architect.

Present indications point to the use of white granite in the construction of the new municipal building for the District of Columbia. The selection of the stone is left by Congress to the judgment of the District building commission, consisting of three District commissioners and the Secretary of the Treasury, and within a few months, it is anticipated, the particular kind of stone will

be selected and the contract for its delivery will be awarded to some quarry.

The commission has directed the architects of the building, Cope & Stewardson, of Philadelphia, to prepare the plans of the stonework, in order that bids for that part of the construction may be obtained by the beginning of next fall if possible. It is thought these plans will be ready for the commission within a few weeks, or two months at the most.

It is understood the members of the municipal building commission are inclined to favor the use of white granite in the construction. Commissioner Macfarland, at a hearing granted the representatives of the Granite Cutters' Union the other day, expressed his personal preference for white granite, and it is believed that other members of the commission also favor that material.

It is estimated that the cost of the stone for the new building will be approximately \$800,000.00. It is believed the commission will not feel inclined to expend more than that amount for the stone, since only about \$400,000.00 would be left for the construction work and other material for the structure.

CLAY.

Mr. John BinBuff has recently become superintendent of the Muscatine Pressed Brick Co., Muscatine, Iowa.

The Delta Brick Co., Cambria, Pa., Harford County, has been sold to the Baltimore Brick Co., for the sum of \$20,000.00.

It is reported that the Buffalo Brick Co., Buffalo, N. Y., loaded and shipped a carload of fire clay tile recently for Princeton, Mo.

The Pardi and Donna Tile Co., New York City, has been capitalized at \$10,000.00 by the following directors: Astude Pardi, Giuseppe Donna and Pietro Zilia, of New York City.

The Federal Clay Products Co., Dayton, Ohio, has been incorporated with a capital stock of \$100,000.00, by: George J. Markley, T. E. Wilson, Wm. Tracy, J. A. Markley and J. I. Davy.

The Robinson Clay Product Co., New York City, has been incorporated with a capital stock of \$10,000.00, with the following directors: L. I. Foster, of New York; F. W. Butler and B. W. Robinson, Akron, Ohio.

Messrs. Lindamood and Puckatt, proprietors of the Columbus Brick Co., have increased the capacity of their plant to meet the increase of orders. This increase is to be from 8,000 to 125,000 brick a day.

The Cameron Pottery Co., Cameron, W. Va., recently held a stockholders meeting and elected the following officers and directors: W. B. Hicks, president; C. E. Hutchinson, vice president; Warren Wilson, secretary and treasurer.

The Metropolitan Paving Brick Co., Canton, Ohio, has been incorporated with the following incorporators: Harry G. Renkert, C. W. Kepplinger, James H. Barbour, Jacob J. Renkert and George R. Shuane, with a capital stock of \$1,000,000.00.

The Lima Pottery plant, Lima, Ohio, has recently been incorporated and will manufacture electric insulators. The capital stock is \$100,000.00. The directors are: E. W. Lathrop, of Boston, Mass.; D. H. Finucan, of Lima, and A. M. Wellman, of Friendship.

The Lexington Brick and Supply Co., Lexington, Ky., is reported as having closed a contract recently to deliver 175,000 face brick to the firm of Goldsmith & Co., Cincinnati, Ohio. Among the great number of samples submitted their samples were considered the best.

Reports from Chanute, Kan., state that a new brick company has been capitalized at \$300,000.00 and will construct a plant on the Lindsay land south of the town which will employ 250 men and have a maximum output of 600,000 brick a day. The main offices will be in Chanute, and the land has been purchased for the plant. George Playter, of Pittsburgh, Pa., is at the head of the movement. The following are the directors: Messrs. J. H. McAdams, D. M. Kennedy and A. N. Allen. The company will manufacture all kinds of paving, building and ornamental brick, and will also develop the oil and gas resources of the land which it owns.

ROCK PRODUCTS.

SUPPLEMENT—TWO PAGES.

VOL. III.

LOUISVILLE, KY., SEPTEMBER, 1904.

No. 6.

Mr. Robert F. Wentz, of the Robert F. Wentz Engineering Co., Ltd., are consulting engineers, making a specialty of erecting cement plants, with head offices at 241 Jarvis Street, Toronto, Ont., Canada, and with branch office in Babb's Block, Nazareth, Pa., has just returned from an extended inspecting tour in Europe.

Mr. H. G. Kotten, the well known manufacturer of pneumatic tools, 120 Liberty Street, New York City, well known as the manufacturer of the Kotten plug drill, so widely received with the approval of all its users, is just now perfecting a new plug drill, which will be ready for the market within the next few weeks, claiming that it will be far superior to anything that he has heretofore invented. The tool will be light in weight so that one man can handle it in drilling holes. It will be of the most simple construction, having no delicate parts or springs which will reduce the wear and tear to a minimum. An important feature of the new invention is the economy of power, the several parts of the improved tool being so proportioned that it will use only a small amount of air and at a low pressure.

The Elastic Pulp Manufacturing Co., South McAlester, I. T., are erecting a plant 106x40 feet for manufacturing elastic-pulp plaster, fire clay and plaster of Paris at a cost of \$50,000.00. J. B. Ehrsam & Sons Co., Enterprise, Kan., are the engineers in charge.

A. C. Torbert & Co., 1605 Monadnock Block, Chicago, Ill., is sending out a general catalogue, giving description of locomotives, cars and other steam shop equipment and also other contractors equipments that they have on hand.

We have received from the Ruggles-Coles Engineering Co., 39-41 Cortlandt Street, New York City, a copy of catalogue E, entitled, "Ruggles-Coles Dryers," which sets forth in an artistic and business-like manner the machines which make up the system of a complete plant of their well known apparatus, also embracing sectional drawings and lucid exhibits of the methods which make up the system.

The Harmon S. Palmer Hollow Concrete Building Block Co., 1450 Binney Street, Washington, D. C., are issuing to the trade from their advertising department a new album which is a work of art from one standpoint, and on the other hand gives a very great deal of useful information to all persons interested in hollow cement building block construction. Such literature really tends to the up-building of the trade in a great measure.

The Ricketson Mineral Paint Works, Milwaukee, Wis., have received several flattering testimonials from the manufacturers of sand-lime brick who have tested and used their colors in making this new and well received building material.

The Jeffrey Manufacturing Co., Columbus, Ohio, well known manufacturers of elevators, conveyors and power transmitters are out with a handy catalogue entitled, "Jeffrey Water Elevators," exploiting by illustrations and diagrams the specifications of their installation for such purposes. Everybody who has need for a substantial water lifting apparatus will find his information quite incomplete unless he gets one of these very brief but comprehensive documents.

The working model concentrating plant built by the Allis-Chalmers Co., which forms one of the most interesting features of the State of Utah exhibit in the Mines and Metallurgy Building, is to be presented to the Utah School of Mines after the close of the Exposition.

Every separate part of the plant has been lettered with descriptive legends, so that the onlooker as he watches the plant at work, will be able not

only to see what is being done but will also be able to learn the name of the part that does the work. This makes the plant much more interesting as an exhibit and will add greatly to its value as an adjunct to the Utah School of Mines.

The American Sandstone Brick Machinery Co., Saginaw, Mich., have a number of testimonials from users of their machinery which certainly are very encouraging. This company has erected a dozen or more plants which are now in operation in the United States, while the same system is employed by seventy or more plants on the Continent of Europe. This looks as though sandstone brick are here to stay. The Saginaw plant, which was one of the first installed, has turned out more than 8,000,000 brick, all of which have been used and are giving entire satisfaction. Of course the competitors of sandstone brick are doing all they can to prevent this material from getting a foothold, but in any location which is fit for the manufacture of this material no clay brick maker can compete.

The Eagle Portland Cement Co., Eagle, Wis., has been incorporated by Milwaukee and Waukesha capitalists with a capital stock of \$600,000.00, to operate extensive and valuable marl deposits which have been discovered in the immediate neighborhood. This will be the first Portland cement mill to be established in the State of Wisconsin. Already a little town has sprung up about the place of operation which goes to make the beginnings of such a plant.

Martin Hardsocg, manufacturer of the "Little Wonder Pneumatic Drill" has incorporated his company, which will, in the future be known as the Hardsocg Wonder Drill Co., with principal offices at Ottumwa, Iowa, which concern will continue the manufacture of the "Little Wonder Drill," already being favorably received by mining and quarry operators, throughout the Western portion particularly.

Mike Elmore has just secured a large contract for railroad ballast from the Burlington railroad and is locating a new crushing plant on the new cut-off of the Burlington, between Old Monroe and Mexico, Mo. He has just placed an order with J. G. Waterman, manager of the Austin Manufacturing Co., at St. Louis, for one No. 8 and one No. 5 Austin crusher with elevators and screens. The crushers to be run in tandem, rock to be loaded into five yard dump cars by means of steam shovels, and drawn to the crusher with dinkie engines. The plant when completed will be the finest in the State of Missouri, and will be capable of producing 1,200 yards of ballast per day.

The Alamo Manufacturing Co., of Hillsdale, Mich., are keeping up their reputation as progressive gas engine manufacturers. They have just completed a 40 h. p. engine, it being the first of a line of engines ranging from 12 to 250 h. p., especially designed for electric lighting purposes. The engineers and gas engine men who witnessed the trial run of this engine on the testing block emphatically declare there is no better engine on the market at the present time. The shop is running extra hours in order to get these engines to the trade at the earliest date possible.

A syndicate headed by Mr. Will J. Scoult, Kearney, Neb., some two months ago purchased from The American Hydraulic Stone Co., of Denver, Colorado, the State rights for Nebraska. This syndicate has disposed of, and factories have been established in twelve towns in Nebraska. They have now purchased from the same company the Iowa State rights, and will establish headquarters at Davenport, Iowa.

MONUMENTAL POSSIBILITIES.

Dallas, Texas.—Mrs. Judge John F. Henry died here recently, leaving her husband and several children.

Daiville, Ky.—Mrs. Mary Conley, mother of William and Henry Conley, died August 8, in her 81st year.

Elmira, N. Y.—Gustavus W. Nagle, a well-known bridge builder, died at his home here August 6. Address estate.

Farmingville, Conn.—George F. Lounsherry, former Governor of Connecticut, died at his home here August 16.

Henderson, Ky.—Riley Tweedy died of typhoid fever at the home of his father, W. C. Tweedy, near Smith's Mills.

Columbus, Ga.—W. H. Fopping, president of the Columbus Waterworks Co., died July 31, aged 84 years. Address estate.

Charlestown Ind.—Alfred Rauchfuss died at his home here August 22d. He was nearly 70 years of age, and leaves a wife.

Owatonna, Minn.—Ex-Congressman Mark H. Dunnell, of the Eighth Minnesota district, died August 8, of heart disease.

Sodus, N. Y.—Robert Wride, who has resided in Sodus for 80 years, died recently at the age of 101 years. Address estate.

Booneville, Ind.—Perry Taylor, aged 45 years, a wealthy farmer of Yankeetown, died August 22, of paralysis. Address estate.

Brinkley, Ky.—Learly Perkins died of consumption recently. The infant daughter of Sheriff C. L. Napier died August 16.

Natchez, Miss.—Dr. B. D. Watkins, who was recently thrown from his buggy and severely injured, is dead. Address estate.

St. Mary's, La.—J. W. Barnett died at his home on Shadyside August 7. Mr. Barnett was a prominent planter. Address estate.

Jackson, Tenn.—Col. John J. Williams, a successful and prominent civil engineer, died at his home here July 29, aged 86 years.

Lexington, Ky.—Miss Mary N. Browning died at the residence of Mrs. Elizabeth Higgins, on Constitution Street, aged 75 years.

East Orange, N. J.—Ex-Judge Seymour D. Thompson died at his home here recently. He was 66 years of age and a well-known jurist.

Stanford, Ky.—Mrs. R. B. Mahoney, one of the finest women in the State, died recently at her home here, leaving a husband and family.

Hartley, Iowa.—Robert Jones died at his home north of here recently of typhoid fever, aged 57 years, leaving a wife and seven children.

Clifton, Staten Island.—Wm. Bachmann died at his home here August 2, at the age of 62 years. He leaves a brother, Frederick Bachmann.

Plainfield, N. J.—James E. Turrill is dead at his home here at the age of 67 years. He was until recently connected with the Standard Oil Co.

North Yakima, Wash.—Charles G. Wands, a well-known civil engineer of this place, was instantly killed July 23, by falling from a train.

Bristol, Tenn.—Major M. L. Blackley, 63 years of age, and a prominent lawyer, died suddenly at his home here of heart failure. Address estate.

New York, N. Y.—Samuel Putnam Avery, an art dealer and connoisseur, died recently at his home, No. 4 East Thirty-eighth Street, at the age of 82.

Michigan City, Ind.—Abram R. Colborn, head of the Colburn Lumber Co., died August 12, of paralysis. His estate is valued at several millions.

Macdoile, Pa.—James H. Montgomery, vice president of Allegheny College, and a scientist of national reputation, is dead at the age of 50 years. Address estate.

ROCK PRODUCTS' SUPPLEMENT.

Stillwater, Minn.—Edward P. Mackey, of the logging firm of Mackey Bros., was accidentally drowned at International Falls. Mr. Mackey was 37 years of age.

Jackson, Tenn.—Rev. E. B. McNeil died here recently. His six sons acted as pall-bearers at his funeral. One son, Dr. Irvin McNeil, of Muscalero, N. M., could not get here.

Brooklyn, N. J.—John W. Wood died recently. He was for 20 years connected with the executive offices of the Stock Exchange. He lived at 364 Stuyvesant Street, Brooklyn.

Millersburg, Ky.—Mrs. George W. Bryan died August 17th at St. Joseph Hospital, Lexington. She was a sister of Mr. W. C. Owens, and was a prominent temperance worker.

Smith's Grove, Ky.—Dr. T. B. LaRue an honored and loved physician of this place, died July 17, aged 83 years. He leaves his wife and a daughter, Mrs. E. A. Shobe, of Oakland.

Paducah, Ky.—Fred Crice, of Barlow, and brother of Attorney Thomas Crice, of this city, was run over and killed by the engine of a wheat thresher. He was 28 years of age and leaves a family.

St. Louis, Mo.—Mrs. Breckinridge Jones, aged 54 years, and the wife of the millionaire vice president of the Mississippi Valley Trust Co., died August 14, from injuries received in a runaway.

Minneapolis, Minn.—Rev. Patrick P. V. Hartigan, a well-known priest, is dead of congestion of the brain at the age of 48 years. He was prior of the Holy Rosary Convent of Dominican Fathers.

Springfield, Ky.—John W. Kelley, vice president of the Washington County Fair Association, and a prominent farmer and stock raiser, died at his home near here August 16, of a complication of diseases.

Minneapolis, Minn.—William H. Springer, a well-known lumberman, died recently at Glenwood Springs, Colo. The remains were brought to Minneapolis for interment. Mr. Springer left a wife and daughter.

New York, N. Y.—Morris Felleman, president of the M. Felleman Distillery Co., died at the Roosevelt Hospital August 12. He was 54 years of age and lived at 1276 Bergen Street, Brooklyn. His wife and three daughters survive.

Smith's Grove, Ky.—Mrs. Sallie Richeson, aged 80 years, died August 18, at her home near Hays, this county, of a complication of diseases. She was the wife of G. W. L. Richeson and the grandmother of J. B. Richeson, of this place.

Stockton, Cal.—Mrs. Robert Rhea Hammond, wife of Dr. Hanmond, of this place, is dead at the age of 26 years. She leaves one child. Her father, William Newman, lives in Bellair, Fla. A sister, Mrs. Robert Judge, lives in Louisville, Ky.

Chicago, Ill.—Liborius Gollhardt, secretary and treasurer of the Tosetti Brewing Co., of Chicago, died in a cab July 22, while on his way to a sanitarium in Milwaukee. Mr. Gollhardt was 73 years of age and leaves two daughters, Mrs. Ernst Tosetti and Mrs. Richard Wagner.

Troy, N. Y.—E. Fisk Brown died at his home, No. 2606 Fifth Avenue, aged 72 years. He is survived by his wife and one daughter, Mrs. Chas. Turpin, of this city, and two sisters, Mrs. Lydia Van Nann, of the North End, and Mrs. Luthera Burnham, of Hoosic Falls.

Colesburg, Ky.—William O. Stovall, a prominent farmer of this section, died of a complication of diseases, aged 70 years. Four sons, Joseph, Samuel, John and Charley Stovall, and two daughters, Mrs. Clayton Montgomery and Mrs. Aggie Monier, survive him.

Junction City, Ky.—Col. Sam M. Burdett, one of the ablest political writers of the day, died recently at the home of relatives here at the age of 48 years. His widow survives. Col. Burdett was a member of the bar at Lancaster, Ky., and was at one time connected with the Louisville *Courier-Journal*.

Wesminster, Md.—Edward Lynch died at his home here August 14, in his 78th year. He leaves a widow and seven children, Mrs. John S. Matthias, Mrs. Orlando Reese, M. John Lynch, Thomas O. Lynch, C. Lloyd Lynch, of Wesminster; Mrs. Edward Shriver, of Waynesboro, Pa., and Edward Lynch, of Philadelphia.

BUILDING PROJECTS.

Washington, Ga.—The city contemplates issuing bonds for \$10,000.00 for school purposes. Address the Mayor.

Knoxville, Tenn.—The Tennessee Medical College has had plans prepared for the erection of a \$20,000.00 hospital.

Yazoo City, Miss.—The city contemplates issuing \$100,000.00 worth of bonds for public buildings. Address the Mayor.

Muskogee, I. T.—An opera house to cost about \$40,000.00 will be erected in the near future. George H. Johnson is architect.

Montgomery, Ala.—It is reported that a \$40,000.00 theatre with seating capacity of 1,500 will be erected by J. C. Montgomery.

Shreveport, La.—The City Council is voting on issuing \$100,000.00 bonds for the erection of a City Hall. Address the Mayor.

Elkins, W. Va.—It is reported that an addition to the Hotel Randolph to cost in the neighborhood of \$25,000.00, will be erected at an early date.

Fort Smith, Ark.—J. J. Mahoney, general manager, Fort Smith & Western Railroad, Fort Smith, Ark., will erect a \$20,000.00 freight depot at that place.

Mobile, Ala.—It is reported that plans are being prepared for a six-story building, an addition to the Bienville Hotel that will cost \$60,000.00. Address the Mayor.

Meridian, Miss.—It is said that the city of Meridian will issue bonds to the amount of \$50,000.00, for the purpose of paving its streets and sidewalks. Address the Mayor.

New Orleans, La.—Louis P. Rice is to erect a building for commercial purposes to be seven stories high to cost \$150,000.00. This building is to have all modern improvements.

Dallas, Texas.—It is reported that J. I. Case Threshing Machine Co., of Racine, Wis., has secured a site on which to erect a five-story brick and stone building to cost \$50,000.00.

Chattanooga, Tenn.—It is reported that Dr. E. F. Lovejoy has purchased a site on which to erect a \$35,000.00 sanitarium. Plans for same are being prepared by Huntington & DeSabla.

Abbeville, La.—The city is endeavoring to have constructed the waterworks that was lately reported as contemplated at a cost of \$40,000.00. The Board of Aldermen is in charge.

Wharton, Texas.—H. J. Bolton, S. D. Purviance, G. W. Denton and others have incorporated the Bolton Warehouse Co. with a capital stock of \$10,000.00, to maintain a public warehouse.

Sumter, S. C.—It is reported that the Sumter Hospital Co., which recently incorporated with a capital stock of \$20,000.00, will erect a hospital and contemplates building it of artificial stone.

Montgomery, Ala.—Mr. B. B. Smith, architect, has been engaged to prepare plans and specifications for an extension to the waterworks for which \$200,000.00 bonds were issued. Address the Mayor.

Springfield, Md.—Plans and specifications have been prepared by Owens and Sisco, architects, 14 West Lexington Street, Baltimore, Md., for a home for convalescents for the Springfield State Asylum. The structure is to be three stories high with basement. Bids are asked for and must be in by September 5.

Newport News, Va.—A business block is to be erected by C. F. Jesser that will cost \$15,000.00. It is to be of brick and steel with buff brick front.

Knoxville, Tenn.—Mr. Owen Ford, 710 Security Building, St. Louis, Mo., has been engaged as engineer in charge of the water works, for which \$750,000.00 of bonds was recently voted. Address the Mayor.

Pittsburg, Texas.—\$20,000.00 worth of bonds has been voted on for the construction of the proposed waterworks. M. Griffin O'Neil, of Dallas, Texas is the engineer in charge. John W. Hooper is mayor of the town.

Louisville, Ky.—It is reported that the Fiscal Court has commissioned Brinton B. Davis, of Paducah, Ky., to prepare plans for the armory building, which will be erected on a site recently purchased on Walnut Street.

Columbia, S. C.—The firm of Sligh & Aten Dry Goods Co., reported as incorporated recently with a capital stock of \$30,000.00, will erect a store building 45x150 feet, three stories high. Frank Saugers, architect in charge.

Searcy, Ark.—An electric light plant is to be constructed to cost in the neighborhood of \$21,000.00, and bids will be asked for in the near future. Owen Ford, 710 Security Building, St. Louis, Mo., is the engineer in charge.

Columbia, Miss.—It is reported that the Board of Trade is negotiating with Hattiesburg, Miss., capitalists for the establishment of waterworks system, electric light plant and ice plant to cost about \$50,000.00. Address the Mayor.

Houston, Texas.—The Texas Sanitary Street Flushing Co. has been incorporated by Charles X. Gauthier, Frank C. Mitchell, H. P. Laughlin, and J. E. Browne, with a capital stock of \$5,000.00 for the purpose of supplying water to a number of counties.

Kissimmee, Fla.—The city has sold bonds that were issued for the enlargement and improvement of the electric light plant, and is now ready for bids on same. Plans and specifications for same have been completed. About \$19,000.00 will be expended on same. Address the Mayor.

Little Rock, Ark.—Bids have been asked for the erection of a six story hotel building to be erected at Markham and Louisiana Streets, according to plans and specifications drawn by George R. Mann, architect. The building will be of brick, and is to cost about \$250,000.00. Address the Mayor.

Danville, Va.—Bids for the construction of a filtering plant and pumping station will soon be asked for. This station is to be placed on the Dan River and will cost \$100,000.00. Lockwood, Greene & Co., Boston, Mass., have been engaged by the city to prepare plans and specifications for same.

St. Paul, Minn.—The new office building which the Soo line is to build will cost about \$150,000.00 and will be six stories high. It is to be built of terra cotta and brick and is to be strictly fireproof, with wire glass windows.

Springfield, Ill.—A handsome store and flat building will soon be erected by Chester Bolles at North Grand Avenue and Eighth Street, 30x74 ft. and will face south on the avenue. The work will be begun in a short time.

Hackensack, N. J.—The Site Committee appointed by the State Board of Education to select a location for the new State Normal School, are making visits to Richwood and other places to select a suitable place for the normal school. The committee is composed of Messrs. Russ, Colby, McCutcheon, Scott, Hays and Betts. It is thought that Bergen will get the school.

Roofing.

The National Association Master Composition Roofers.

J. B. Ohligschlager, Louisville, Ky. President
 J. W. Moore, Providence, R. I. First Vice-President
 Peter LeGoulan, Pittsburgh, Pa. Second Vice-President
 E. E. Locke, Indianapolis, Ind. Secretary and Treasurer

DIRECTORS.

E. S. Bortel, Philadelphia, Pa.
 H. W. White, New Orleans, La.
 C. B. Jameson, Buffalo, N. Y.

The Executive Board consists of the officers and directors.

Committee on Laws: E. F. Shaffer, Columbus, Ohio; A. B. Bartholomew, Memphis, Tenn.; C. A. Monks, Louisville, Ky.

Official Organ Rock Products.

THE OBJECTS OF THE ASSOCIATION ARE:

To maintain an organization for the benefit of persons engaged in the business of Composition Roofing; to promote uniformity in the customs and usages of Composition Roofers, to inculcate principles of justice and equity in business; to acquire and disseminate among its members valuable information in reference to the manner and methods of doing work, to establish and secure the use of a superior quality of material and workmanship; to facilitate the speedy adjustment of business disputes; to aid and encourage the formation of local organizations, where practicable, and generally to secure to its members the benefits of co-operation in the furtherance of their legitimate pursuits.

Sea Shells Used in New Orleans.

Mr. H. W. White, the president of the A. H. White Co., Limited, 530 Gravier Street, New Orleans, is the only member of the Association of Master Composition Roofers this far South, and the only member of the association in the city of New Orleans. He is a member of the executive board of the association and one of the board of directors.

"The aim of the association," said Mr. White, "is to have the architects specify this special brand of roofing felt when making the plans and specifications for buildings. It is used only by members of the association."

"The tendency in modern buildings is to construct them with flat roofs, which is very much better in case of fire. Then the fire men can fight the fire from the roof as well as from below. The old time buildings here that are covered with slate, make it very bad in handling fires successfully, hence this kind of roofing is more popular than slate."

"This roofing comes ready prepared for putting on. In the North gravel is used, but here in the South we use reef shells. We do it as matter of convenience and then too in this climate the shells are preferable for they do not retain heat like the gravel. The shells are brought up here in schooners and luggers from the reefs along the Gulf of Mexico, and by the action of the waves they are broken and worn into small smooth pieces. When they are brought in they are sifted and screened and the sand and the shells that are too fine are taken out and sold for other purposes."

The shells exhibited by Mr. White are tiny little sea shells and fragments of shells no larger than a snow flake or a frost crystal. The supply is as endless as the sands of the sea, as every tide brings in or casts on the reefs a fresh supply. To get gravel here would mean a long haul on the

railways, which would be far more expensive than the sea product.

This business was established here in 1882 by Mr. A. H. White, the father of Mr. H. W. White. At his death in 1900, the A. H. White Co. was organized and Mr. H. W. White was elected president. He is eminently fitted for the position for he has grown up in the business and knows it in every detail. From boyhood he was associated with his father and when he had grown to manhood bore his full share of the burdens of the business. That he is successful, goes without saying, and that the special brand of roofing he manufactures is growing in popularity is due to the fact that he has a good article and presents it in a businesslike manner.

Effect of Rainfall on the Roofing Business.

CHICAGO, September 1.—Chicago went to bed on August 21 considerably astounded at the remarkable downpour of rain, which had continued throughout the day and far into the night. It was the first heavy downpour of the season, and put the roofs of the city to one of the severest tests encountered for a long time. On the following day there was a great scurrying among householders to summon roofers to repair leaky roofs—thousands of roofs showing many sad defects. Take it all in all the roofers have had one of the busiest weeks of the season so far and are still very busy on repair work. Outside of this incident there is little to report in this line.

Some of the leading roofers are now busy covering many of the large buildings which have reached their altitude of from ten to eighteen stories, and are pushing their work with the greatest dispatch. The character of the roofs vary according to the whims of the owner, here a slate roof, there a gravel, and in a number of instances a felt and flax roof, in which pitch is used more or less. All the better class of structures are covered with good, substantial roofs, without regard to cost, and which are guaranteed to last for a stated period of years, without the necessity of any repairing to be done. It is not policy to put a poor roof on a good and well-built house; it is the poorest kind of economy they say.

Business on the whole has been much better than it was in July and still greater improvement is looked for during the next two months, or before the advent of cold weather. When the snow begins to fly the roofing business comes to a halt. The cornice business is really active, and some of the shops are working over-time. Zinc and galvanized sheet iron is worked out into all sorts of fantastic forms by the cornice machines now in use, and which have been greatly improved during the past few years. All the large roofing contracts made earlier in the season are now in course of being carried out, and but few new contracts are now being made.

Roofers are pleased with the outlook, and think they see more prosperous times ahead, but they seem not to have any news of practical value to give out. Out in the suburbs the old shingle roof seems to hold its own, and many houses constructed the past season resort to this good old covering, but all modern structures, anything approaching the up-to-date methods—disbar the useful shingle and take to pitch and gravel or some of the other various methods of putting on the roof.

Mr. L. M. Beardsley, of the Garry Iron and Steel Co., Cleveland, Ohio, reports a very good business for the last two months, especially in the lines of roofing eaves trough, and iron ore paint, and says the Garry roofing cement is being very favorably received by the trade, judging from the repeated orders. They have also enjoyed quite a demand for their pneumatic machines on export orders.

William J. Cox, Joseph H. Claffey and George Zollinshoffer, Jr., of Brooklyn, have been elected directors of the Atlantic Roofing Manufacturing Co., of New York City. The capital stock of the company is \$50,000.00.

The Perkins Roofing Co., Chicago, Ill., has been capitalized at \$25,000.00 by: R. E. Robertson, W. F. Mulhall and David Jetzinger.

The Decatur Cement Roof and Block Co., Decatur, Ind., has been incorporated with a capital stock of \$10,000.00 by: John B. Holthouse, Henry Hite, John Everett, Simeon B. Fordyce, John D. Meyer, Jesse F. Evans and John B. Dutcher.

Thirteenth Annual Meeting.

(Continued from Page 1.)

Falls, N. Y., Cleveland, Ohio, and Providence, R. I.; but notwithstanding this fact, they decided it would be best to go to some other point. This committee did not make its report at this time, and a great deal of discussion followed with reference to the M. C. R. felt which received as much attention as though it was the association's baby.

The committee along this line reported the transfer of the copyrights from M. C. B. Jameson, Buffalo, N. Y., who had taken it out for the association.

A brief statement was next made by Mr. Emil Machwirth, with reference to conditions and behavior of various kinds of roofings during the Baltimore fire. Prior to this fire, gravel roofing was not allowed within the fire limit at Baltimore. Mr. Machwirth was on the ground shortly after the fire, and made a careful examination and described fully to those present, what conditions were that existed before and after the fire, and wound up with the statement, that Baltimore has decided that gravel roofing is all right and can be laid within the fire limit.

Mr. Thomas stated that 10,000 circular letters had been sent out to various architects, and further note was made of the fact that the M. C. R. labels could be obtained by the members from the secretary and treasurer at a cost of three cents each.

In comparing notes from various points at the close of the meeting, it was discovered that there was a wide range in the price being paid for labor in the various sections.

The fact was further shown that those who were paying the highest price for labor were selling at the lowest price. The ruling price for labor in Chicago and St. Louis was 60 cents per hour, in Buffalo 50, Providence 45, Indianapolis 35, New Orleans, Nashville and Louisville 30. There did not seem to be any entirely satisfactory explanation as to why these conditions of affairs should exist, and it is probable that now as the various members of the association know that there is a wide difference in prices paid for labor in the different sections, there will be some effort made to determine what a fair price is for such labor, and each one will no doubt individually make an effort to adjust his business to what is considered a fair basis for the payment of labor, regardless of whether there are unions or not in those towns.

Adjourned until 10 o'clock the following day.

SECOND SESSION.

Half past nine o'clock found most of those in attendance on hand, but there was so much committee work, and a desire for individual conversation, that the general meeting was not called until after eleven o'clock. It was then discovered that at this, the thirteenth annual convention, there were thirteen members present.

The Committee on Resolutions made its report, as has already been mentioned in the preceding matter.

The Committee on Time and Place next reported, or rather recommended that in view of its central location and of the easy accessibility to most of the members, that while the association had had no general invitation, it would be most desirable to go to Indianapolis, Ind., for the next meeting, especially since the committee had been notified by wire that the Claypool Hotel, the Commercial Club and the Builders' Exchange, all of that city, would be glad to extend all possible courtesies to the association and its members who desired to come there. The association accepted the recommendation of the committee and decided to go to Indianapolis, fixing the time for February 20 and 21, 1905.

After attending to various minor matters the officers were elected. While it was the desire of the association to have the president and secretary who had served them so faithfully for many years remain, President Bortel, who had been in the chair for five years, insisted on withdrawing, and Secretary Thomas, who had kept the records for eighteen years, stated that he was desirous of retiring from the place because he wished to get out of the responsibilities of the active management of his business, and expected to spend a good deal of time in traveling during the next year, and would be unable to give it the necessary attention.

ROCK PRODUCTS.

Mr. Thomas will probably spend a good deal of his time in Cuba during the next year. The officers were elected as printed at the head of this column.

Following the election of the officers and brief speeches by the outgoing and incoming officers, there was further discussion about the M. C. R. felt, and the advisability of taking up some special advertising in this connection was brought before the meeting and discussed, but temporarily laid over. The association recommends the use of this felt, and the process of laying it and covering it so that there shall be 125 pounds of material per square laid on the roof.

The next matter brought before the association was the selection of an official organ. The need of such an organ has been felt for some time, and after some discussion, in which several trade journals were considered, ROCK PRODUCTS, of Louisville, Ky., was selected as the official organ for the promulgation and distribution of such information as the association desired to give to its members or for publication.

The members present were: E. S. Bortel, of Bortel, Harris & Co., Philadelphia, Pa.; Wm. K. Thomas, Wheeler & Thomas Roofing Co., Chicago, Ill.; J. B. Ohligschlager, National Roofing and Supply Co., Louisville, Ky.; P. Le Goullon, of Pittsburgh, Pa.; C. A. Monks, Southern Roofing and Paving Co., Louisville, Ky.; E. E. Locke, Hy. C. Smither, Roofing Co., Indianapolis, Ind.; C. B. Jameson, Buffalo, N. Y.; Emil Machwirth, Machwirth Bros., Buffalo, N. Y.; H. C. Smither, H. C. Smither Roofing Co., Indianapolis, Ind.; H. W. White, A. H. White & Co., New Orleans, La.; A. B. Bartholomew, Bartholomew Roofing Co., Memphis, Tenn.; E. F. Shaffer, Shaffer Roofing Co., Columbus, Ohio, and H. M. Buscher and H. K. Baite, of Missouri Gravel Roofing Co., St. Louis, Mo.

The manufacturers who were in attendance, but not in the meetings, were: C. J. Berman, of the Chatfield & Woods Co., Cincinnati, Ohio; J. D. Waters and Mr. Cotton, representing the Barrett Manufacturing Co., St. Louis, Mo.; Walter B. Harris, Warren Chemical and Manufacturing Co., New York; J. S. Porter, Graham Paper Co., St. Louis, Mo.; Leon Noonan, representing P. Carey Manufacturing Co., St. Louis, Mo.; the F. W. Terpening, The Trinidad Asphalt Co., St. Louis, Mo.; Edward Dunning, General Roofing Manufacturing Co., East St. Louis, Ill.

The ladies accompanying their husbands on this trip were: Mrs. Shaffer, Mrs. Locke, Mrs. Thomas, Mrs. LeGoullon, Mrs. Monks and Mrs. Berman.

The social feature of the meeting consisted of individual and party trips to the World's Fair. Owing to the fact that the association came to St. Louis without invitation, and that the officers had signified that their stay would be so short, and that all would be so busy there was no time for entertainments by local people. There was nothing done by the local people in the way of concerted action, but a number expressed themselves as being desirous of doing something, but were discouraged rather than encouraged by those in attendance.

This being the roofers busy season of the year, those who were there were desirous of seeing some of the Fair and were so limited in their time that they did not feel like being especially entertained. The fact that roofers are so busy at this time of the year accounts for the non-attendance of many of the members whose affairs were not in shape to be left even for a few days. Notwithstanding the attendance was light, this was probably one of the most important meetings in the history of the association. The members met for business, and labored hard while they were at it.

The next meeting will probably be a climax of this one, and one of great importance to every member. Those who were not members will do wisely if they communicate with the secretary of the association and learn what the requirements for membership are. There are a number of applications in the hands of the secretary now which will be acted upon at the next meeting of the Executive Board.

Slate Operations Shut Down.

The Cleveland Slate Co.'s quarry, south of Pen Argyl, Pa., has shut down for an indefinite period. The reason assigned is general dullness in the slate business in this country and the falling off in the demand of the foreign markets.

Slate.

Erecting an Extensive Mill.

EASTON, PA., August 14.—The Pennsylvania Structural Slate Co. write: "We are now erecting a new mill at the American Bangor quarry, at Bangor, Pa., at a cost of \$23,000.00. It is the intention of our company to have one of the finest structural slate mills that has ever been built in the United States, and when the mill in question is completed (which will be about September 1), this plant, together with other mills which we operate, will give us facilities to handle large orders more promptly and better than any two competitors in this line."

The little mention of the American Slate Co.'s Bangor quarry in last month's Rock Product referred to the quarry which is known as the American-Bangor quarry, the company operating six quarries in the district.

"The Vermont Slate Co. has been branching out considerably of late with most satisfactory results," says an exchange published at Granville, N. Y. Some weeks ago the company secured a lease on the old abandoned Bush quarry and equipped it. A fine deposit of slate has been found. The quarry on the Dillingham farm, which John G. Williams opened and has stuck to with such persistent tenacity, has also blossomed out into a quarry of high degree. Working to the east, a splendid vein was struck, and in order to expedite manufacture a second stick was set up recently. Mr. Williams' sublime faith in the quarry has finally been proved to be correct, and it is a pleasure to record the fact.

NORTH WALES.

Account of New Quarrying Methods Now Being Introduced.

BY H. HUMPHRIS,
Member North England Institute Mining & Mechanical Engineering.
Member South Wales Institute Engineers.

(Begin in June Rock Products.)

Trouble With Water Overcome.

Water had all along been a source of trouble, especially after the heavy rains experienced in the district, and as a pump could not be fixed in anything like a safe and secure place, pulsometers were provided which, hung in chains and provided with steam from a small vertical boiler on top, answered their purpose remarkably well.

The level had also been commenced at the other end, but as this was all through solid slate rock no difficulty was experienced, all the water finding its own way out, and as it was here merely a question of hard driving, and as it was found that hand work did not proceed as fast as was desired an air compressor was installed at the quarry and the work thenceforward carried on with the aid of rock drills, having a $3\frac{1}{2}$ in. cylinder and provided with air at 65 to 70 lbs. pressure per square inch; the air being carried over the mountain in a line of 2 in. tubes. In addition to working the drills, the air was also very beneficial for the workings, speedily clearing them of smoke after firing. The average rate of driving in the tunnel has been 5 to 6 yards per week; the length of this tunnel is a few yards short of half a mile.

At the inclined tunnel however things were not proceeding in such a satisfactory manner, the water, as earlier on, being the chief difficulty. As the place was now getting too deep to be cheaply and economically cleared of water by the aid of pulsometers, a double-ram pump was fixed and driven with compressed air. This was found to

be a great advantage as in addition to clearing out the water in a shorter time the air was also very useful for speedily clearing the place after firing.

The pump was advanced as the work proceeded and no further difficulty was experienced.

The work all along the inclined tunnel was carried on by hand, and consequently the rate of driving was very slow as compared with the other end; on the average however, it has been at the rate of about 2 yards per week.

Cost of Driving the Tunnel, (6 Feet by 7 Feet.)

	£ s. d.
Average cost per yard for wages and explosives	2.14. 7
Enginemen, etc.	6. 0
Coal, oil and engine stores.....	10.11
Sundries	7
Surveying, including first survey and preparation of plans.....	1. 2

Total cost per yard driven..... £3.13. 3

For the inclined tunnel the wages amount on the average to £4/1/6 per yard, making the total cost per yard driven for the incline £5/0/2, which is, considering all things, fairly reasonable in both cases.

The meeting of the two roads was eminently satisfactory, the levels being exactly right and the centers very little out, so that no expense was incurred in shearing the sides.

From the bottom of the inclined tunnel and in the level "free sides" are being cut, and in these the feeders for the wire saw will run.

The wire saw is being employed to cut a loose floor and a loose roof, and it is then only necessary for the rockmen to split the blocks off, without the aid of any explosive whatever, thus saving a portion of the rock which is shattered and rendered worthless when powder is used, in addition to producing rock giving larger sized slates, and consequently of greater value.

How the Rubbish is Disposed of.

As the working out of the rock advances, the rubbish is being stowed in up to the roof and will form the floor of subsequent higher workings. The waste being set back, so that the level originally 7 feet wide will be made 14 feet wide throughout, with a double road in, one for full trams and one for empties.

After the next higher cut is made, and as it is advanced the free sides originally 4 feet wide, will be arched over to form tunnels 8 feet by 7 feet high in the center.

It is intended to provide in all galleries an overhead rail for carrying the blocks to the tram road in the cross tunnels. The ultimate yield of the quarry will be about 4,000,000 tons of slate.

It would perhaps be as well in closing to give a few remarks on the employment of the wire saw, and its fitting and mode of working.

The Wire Saw Proved Out.

The saw consists of a wire cord $\frac{1}{4}$ -in. in diameter, composed of three specially tempered strands of steel wire.

The motive power necessary to drive the wire is about 3 to 4 horse power, this of course depending upon the nature of the ground to be cut, and the area it is intended to saw, but care should be taken not to commence on too large a surface or the curvature of the cut will be excessive.

The wire can be carried for any distance on grooved pulleys, preferably about 16 inches in diameter, and the tension on same is supplied by a tightening carriage, the load on such carriage being one suited to the ground about to be cut, which must be situated between the engine and the tightening carriage.

The cutting is done with sand and water which is fed into the groove from narrow troughs.

A special study of the wire saw has been made by the writer who has paid several visits to different parts of Europe in connection with it, and he has had machinery specially made for the saw, as it has been proved that it can be put to work, and do no good—and again, if properly fitted and adopted to the special needs of the district—it can be worked with great advantage, as it performs its work in less time than is occupied by men doing the same work, and costs about one-third, or less, without accounting for its numerous other advantages which are such as should lead to its being adopted generally, on quarries and works in this country, where stone has to be worked, and where the material can be cut *in situ*, as it may be considered a very profitable investment.

Granite.

QUINCY, MASS.

QUINCY, MASS., August 23.—The aftermath of the Barre outing has been garnered, and the jubilant manufacturer who attended has resumed business with a vigor born of the advantage derived from the attendance at such a wholesome pleasure trip. The full and excellent report of Rock Products anent the reunion has received favorable comment on all sides. Still we err in one particular, or rather the type setter was at fault when he made Thomas F. Mannex, of this city, say: "When you want the best granite in the world get Quincy green." No one is a better judge of granite than the same Mr. Mannex, and what he was driving home to the assembled granite men was the fact that the Quincy product led the van, and his words rightly quoted should read: "When you want the best granite in the world get Quincy granite."

Still we flatter ourselves that the report was above the average, when one considers the short time at our disposal to get the matter in print with the rush of work at the home office, etc.

The month just passed has been fairly busy in every department of the trade. There are prospects for a good fall and winter season, and altogether the year 1904 will have to be called a prosperous one.

New Officers Quincy Manufacturers' Association.

The manufacturers' association held their regular meeting August 9, and elected the following officers for the ensuing year: President, John L. Miller; vice president, Thomas F. Mannex; treasurer, James Joss; secretary, Thomas J. Dimphy; executive committee: President, vice president and treasurer *ex officio*, with Henry McGrath, Alexander Falconer, P. T. Fitzgerald, Alfred O. Diack, John C. Murray, James H. Elcock.

Membership committee: Robert Mavers, Patrick W. Driscoll, George Clark, William T. Spargo, Jas. A. White.

John L. Miller, the new president of the association, is head of the well known firm of Thomas & Miller, which was established in 1886. Mr. Miller has been identified with the trade for a period covering thirty years and is master of every part of the business. Learning the trade of stone cutter in his early years, he soon proved by his ability that there was something better in store for him than a mere journeyman. In 1879 he became manager of the Merry Mount Granite Co., and continued in this capacity until 1886, when he formed a partnership with W. H. Thomas, of Saratoga, N. Y., under the firm name of Thomas & Miller. He has always taken a keen interest in the association's affairs and his choice as president is considered a wise one. Harry S. Nicoll, the retiring president, was accorded a rising vote of thanks. During Mr. Nicoll's regime the association made rapid strides in the correction of trade faults, etc. His work was untiring and his leadership marked an epoch in association success.

National headquarters of the Granite Cutters' Union are now established in this city. Removal from Washington, D. C., was made during the first two weeks of August, so that at this writing Secretary James Duncan and his corps of office help are quartered in the Hancock Building, city square. The Union's official journal will be printed in the building adjoining the Hancock chambers.

The union is expected to present a new bill of prices December 1, to go into effect March 1, 1905. The salient features of same will be a minimum wage of \$3.00 per day, and a Saturday half-holiday without loss of pay. What the outcome will be is problematical. It looks like a wage war, but before the spring of 1905, some agreement may be reached.

Ghigl Bros., the sculptors of South Quincy, have been the recipients of much praise for the handsome marble statue of St. John the Evangelist, which they have lately completed at their studio. The design is by Tiffany, of New York. The work was modeled and cut here and on inspection by the designer and owner was readily accepted. The statue shows the evangelist in life size, holding a book in one hand and a crayon in the other. The features are especially striking. The eyes are turned toward heaven as though seeking inspiration for a continuation of the writings. This, with the particularly soft folds of the garment, make the statue a work of art and the best of its kind to be shipped from this city. It bespeaks much commendation for Abraham Ghigl, the modeler, and Archimedes, his brother, who cut the work from a solid piece of Vermont marble.

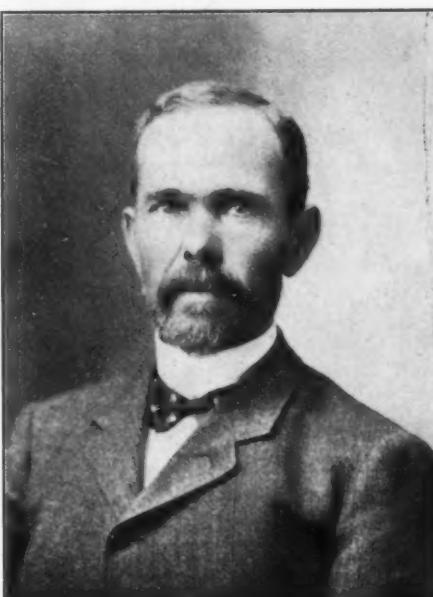
Mrs. Theo Kitson, of this city, has completed a full-size clay model for her statue of the Minute Man of the Revolution, to be erected in Framingham, Mass. The figure is a little more than eight feet high and has been sent to the Bonard foundry in New York, to be cast in bronze. The dedication ceremonies will probably take place in October.

Richard Brooks, of Paris, a former Quincy boy, has been chosen to judge the exhibits of the sculptors at the World's Fair in St. Louis.

Fred Barncoat has outgrown his present office building and is erecting more commodious quarters just east of the present edifice.

Swingle & Ford have on exhibition scenes from the trip to Barre which are attracting much attention.

Thomas J. Dimphy, accountant for the Quincy



John L. Miller, President of the Quincy Granite Manufacturers' Association, Quincy, Mass.

Granite Quarries Co., and secretary of the Manufacturers' Association, has been taking a much needed rest on the shores of Lake Simcoe, N. H.

John L. Miller, of the firm of Thomas & Miller, has been on a business trip through the South.

William Parry, the Barre manufacturer and official photographer on the Barre outing, renewed acquaintances here during the week just passed.

President Alexander, of the Barre Manufacturers' Association, came here on August 13, to root for the Barre Rangers, who played a return date with the Quincy team at foot ball. The visiting team has taken into camp and had to return to the Vermont granite centre without the local's scalp dangling to its belt.

The McDonnell Brothers, John P., James and Thomas, of the firm of McDonnell & Sons, of Buffalo, N. Y., found everything in perfect running order at their Quincy plant during their late visit here.

Not a few of the manufacturers have had difficulty in getting their polishing done in time. There is a rush at the polishing mills and a few more thoroughly equipped plants would be an advantage to the trade.

The cut rates on the railroad consequent to the G. A. R. encampment in Boston, brought many visiting granite men here during the past week. A

partial list of those to call on the trade follows: J. W. Kerr, Franklin, Pa.; George French, representing Joseph Carabella, Cleveland, Ohio; Alfred Baxter, representing Alex McDonald, Trenton, N. J.; James B. Rose, Nare, Mass.; J. P. McDonnell, Buffalo, N. Y.

Thanks for Sullivan Machine Co.'s Invitation.

In relation to the late joint outing of the manufacturers to Barre, Vt., the local association was the recipient of a very cordial invitation from the Sullivan Machinery Co., to stop off at Claremont, N. H., and inspect their plant. Had not previous plans been arranged the association would have gladly accepted the kind offer. Needless to add, the local manufacturers appreciated the thoughtful invitation and take this means of publicly expressing to the Sullivan people their sincere thanks.

July has been a banner month for granite shipments. Nearly fifteen million pounds of rough and finished granite have been shipped from here by rail. This, with the thousands of paving blocks and countless number of perches of stone hauled by team to Boston and the water front, gives one a fair idea of the output of Quincy quarries. The shipments by rail were divided as follows: Quincy Adams, 4,561,985 pounds; West Quincy, 8,164,965 pounds; via the Quarry railroad, 1,780,530 pounds. Total, 14,507,480 pounds.

NEW BRUNSWICK.

ST. GEORGE, N. B., August 27.—Messrs. Milne, Couts & Co., report a fair business in all their sheds at St. George which are running at full time with prospects of working enough to last on to the end of the season.

MILFORD, N. H.

MILFORD, N. H., August 17.—Tanelle & Sons report trade very good with large orders at the quarry as well as at the cutting plant. They expect to raise a large derrick by spring so that they can handle orders more promptly, and raise larger blocks than they can handle at present with a thirty-ton derrick. The new derrick will have a capacity of 75 tons and they hope to have it in time to meet the spring demands. Mr. F. C. Drew has sold out his interest to P. C. Felli & Co., of this city, and he is going out to California for his health.

CONCORD, N. H.

CONCORD, N. H., September 1.—The granite industry in Concord is more flourishing at the present time than it has been since 1900. This new impetus started about the middle of June, and the prospects for its continuation, are most promising. Much of the work in the different yards is of a building nature. The largest force employed in the city is that of the New England Granite Co., who have a contract for the Camden, N. J., court house. About 125 cutters are at work in the sheds and about 50 in the quarry. The first compressed air plant in Concord to send air to the quarries was recently put in operation by John Swenson, and is working successfully. Mr. Swenson has contracts for the granite to be used in the post-offices at Hastings and Lincoln, Neb., and several jobs in New York City, including two school houses. Ola Anderson is prospecting to considerable extent in a vein of gray granite at Mount Sunapee, N. H. He is furnishing the Concord granite for the new high school being erected in Rochester, N. H. Mr. Charles Peverley, of the firm of Peverley Bros., quarry agents at Philadelphia, Pa., was in town last week. Mr. C. O. Bode, of Portsmouth, Ohio, and Mr. J. A. Whitehead, of Mechanicsburg, Ohio, were also recent visitors to the granite trade.

Blanchard Bros.' Granite Co., Uxbridge, R. I., has been awarded a contract for building a large arch bridge at Southbridge and have begun operations.

Some of the finest pink granite yet discovered is quarried from a gigantic deposit on an island in Jonesport Bay. The first quarry of it was opened about six years ago, and now the Metropolitan Pink Granite Co. owns 100 acres of the land underlaid by an apparently inexhaustible supply. The granite in this quarry is red pink mottled in color and texture unlike any other material known. It is very popular with the architects and builders which makes it necessary for the company to erect a new mill with much additional new machinery to supply the trade. *Portland (Me.) Argus*.

BARRE, VERMONT.

BARRE, VT., September 2.—Business in Barre has never been better than it is at the present time, and the prospect for the fall and winter is that there will be a continuation of the same. Isn't this a good time for everybody to insist on profit prices? Not too much, you know, but at least enough to lend respectability to the business.

Nothing has been done as yet by the Barre manufacturers in regard to the matter that was discussed at the joint meeting when the Quincy men were here. It was voted at that time that committees should be appointed from both associations to see what could be done about forming some sort of an organization that would better the conditions of all concerned. The Barre sentiment seems to universally favor the project but they have been rather waiting to see what Quincy would do. On the face of things it would seem that there is no time like the present, while the pot is still boiling, to go ahead and do the business. The right kind of organization will surely promote the interests of all concerned.

In connection with J. P. Corskie I remarked that Barre seems to be sending a goodly portion of its monumental work to St. Louis, whereupon he called me down by asserting that more Barre work goes to Louisville than to St. Louis, and that three times more goes to Chicago dealers. Since last March Corskie & Son have shipped \$7,147.00 of work to St. Louis in medium sized jobs.

One of the biggest things that has happened in the Barre granite industry this year was closed up last week when J. B. Reinharter sold a half interest in his manufacturing business to D. M. Miles, one of Barre's best known and most able capitalists. The firm will now be known as Reinharter Granite Co. Mr. Miles already has a heavy interest in the Bond & Whitcomb's quarry which has just been equipped with everything that money can buy and this will give the new company a first class quarry connection. The new company, immediately after the deal was closed, placed the contract for building an extensive addition to this plant, giving them 450 feet of straight shed room and everything in modern equipment. They have closed a land deal that will give them an opportunity to extend the shed to 700 feet if necessary. It looks as though the Reinharter Granite Co. would make the building and the mausoleum business hum.

Change of Firm.

Notice has been given to the trade of the dissolution of partnership in the firm of I. W. Bates & Co., the company heretofore having been composed of I. W. Bates and William Milne. Mr. Bates retires from the firm and the business will henceforth be conducted by Mr. Milne and Frank Odgers under the same name as previously. The new firm agrees to assume all indebtedness and to collect all outstanding bills.

A Runaway Accident.

Alderman Frank Burke, of Burke Bros., was out driving with Mrs. Burke a few days ago when they had a very narrow escape. The Alderman was speeding it a little when some "Yahoo" drove in front of him so as to force him to pull his horse up to a sudden stop. The harness broke and the horse ran up a steep bank, overturning the carriage and throwing out the occupants with great violence. Mrs. Burke was uninjured, but the Alderman landed on his head and was quite badly bruised about the face. That he escaped without serious injury is quite miraculous.

Labor Conditions Discourage Investment.

It now seems hardly probable that the immense new plant of the Mead-Morrison Manufacturing Co., which recently absorbed the John A. Mead Manufacturing Co., of Rutland, will be located either in Rutland or any other place in Vermont. Nothing has been done during the past few weeks in connection with the location of the factories but it is understood that several of the directors of the new company are in favor of locating the works at Jamaica Plain Mass., and this will probably be the outcome. A director of the company says that the labor conditions in Rutland at the present time have injured considerably Rutland's chance of securing the new industry.

The sympathy of the trade is with Harlan H. Slack over the sudden illness of his wife, which

occurred a few days ago. Mr. Slack is a member of the granite firm of Cannon & Slack, of Northfield.

A Gigantic Slate Combination.

A number of the leading slate firms in Vermont and Northern New York have entered into a combination. They agree to limit production to 300,000 squares of roofing slate annually for five years. The principal firms are Morton Bros., the Edwards Slate Co., and Owen Sons, of Granville, N. Y.; the Vermont Slate Co., Poultney Consolidated Slate Co., Auld & Conger, and Griffith Nat. Slate Co., Poultney, Vt., and Rising & Nelson, of Pawlet, Vt. The company is to be called the Mercanpea Green Slate Co. It is chartered in New York with a capital of \$150,000.00. It will endeavor to extend its market to foreign countries.

Loses an Eye With Hot Lead.

A peculiar accident happened recently at the Woodbury Granite Co.'s quarry in Woodbury. E. F. Dotey, an employee, was assisting in erecting a derrick by pouring molten lead into a dowell hole to secure the pin, and was bending directly over the hole. A little water in the hole or the quick compression of the air, blew the hot lead upwards and he was struck in the eyes and forehead. The man is in bad shape and will probably lose the sight of at least one of his eyes.



A pair of good ones in front of a Church. Samuel Oldham, of Geo. Oldham & Sons, and D. L. Rowe, the man who sells the Hooker Elevator Carrier and Wright Wire Rope.

Using the Latest Hooker Carrier.

The Woodbury Granite Co. have just erected the second Hooker elevated cableway. This one is the latest model and has a span of 1200 feet and will carry a 10 to 15 ton load and takes the load up from the quarry and dumps it automatically in 45 seconds and the round trip in 2½ minutes. It is a new idea, simple in construction and is operated by a single engineer. It will soon be used on all the quarries for handling gravel. The Woodbury Granite Co. now intend to erect two more this fall or early spring.

The Brandon Italian Marble Co. plant at Middlebury is still closed on account of the strike and the company shows no indication of giving in.

They Want Him to Make the Laws.

James K. Pirie, the well known quarry owner, was recently nominated by acclamation at the Democratic caucus at Williamstown as the party's choice of candidates for representative to the Vermont Legislature.

The Grearson & Beckett Co., of Williamstown, are doing a big business and this rapid increase this summer has made it necessary for them to enlarge this already commodious and well equipped plant. They have accordingly just completed an addition which gives them 240 feet of shed room.

The granite firm of McIver & Mathieson, who recently sold a part of their business in order to de-

vote more attention to their quarrying operations, request us to state that they will still continue to look after their customers in the monumental field.

Taking Part With the Military.

During the past month P. J. Rogers, of the Rogers Granite Co., has taken a business trip to Chicago and other points West. At the present writing he is in command of Company E, V. N. G., at the military maneuvers at Manassas Junction, Va.

The Belden's Falls marble property and water power, controlled by Mr. Worthley and son, of Chicago, on which George C. Underhill, of Rutland, recently obtained an option subject to another lease, has just passed into the hands of the Vermont Marble Co., of Proctor. It is understood that the stipulated price for the property was \$60,000.00. It consists of a magnificent water fall, a marble working plant, including mills and finishing shops and a number of workmen's cottages. There are indications that the Belden's Falls transfer is only one of a number of important marble deals in prospect.

Samuel Novelli, the famous carver of the granite firm of Novelli & Corti has gone to his former home in Italy, for an extended visit.

Elaborate Monument Job.

A mausoleum costing about \$10,000.00 is being cut at Jones Bros.' plant in this city. It is of unique design, one building being inside another. The dimensions of the outer building are 17 ft. high and 16x27 ft. ground space. It is one of the most elaborate jobs ever cut in Barre.

A carload of rough granite was shipped last week to Aberdeen, Scotland, from the quarry of Milne, Clarihew & Gray, of this city.

T. J. Kelleher, to whom was awarded the contract to build the Joel Foster memorial in Montpelier, has sublet the job to Harry Bartoli, at whose sheds the monument will be manufactured and the statue cut. The contract calls for its completion by December 1.

Whitcomb Bros. have just completed installing a 40-ton derrick and a 40-horse power hoist at the Burney Marble Works in Bethel.

The Inventor Has His Troubles.

For several months past an inventor has been at work at the granite cutting plant of Jones' Bros., constructing a machine designed to cut moulding in granite monuments. It was, so far as known, the first machine of its kind ever constructed, but in its initial endeavor it failed to do the work expected of it. The chief difficulty seemed to be that the granite was too hard for the machine. It is well to remind the inventor that the success of genius has always been wrought over the ruins of failure. Keep at it, Mister; the granite business needs all the machinery that can be invented to save the cost of production, and the trade will watch with interest the progress of this invention, even though its first trial has not succeeded.

Death of Capt. Hugh A. Duffy.

One of Barre's pioneers and an old timer in the granite business, although for several years retired, was Captain Hugh A. Duffy, an alderman of the city of Barre. Captain Duffy had many friends in the granite world who will be grieved to learn that he dropped dead on the streets of Barre August 24, the cause of his death being heart failure. He was born in Utica, N. Y., in 1840. After serving through the war in Company I, 14th New York Volunteers, he formed a partnership in Syracuse with D. J. Francis as dealers in granite and marble. The firm did business for twenty-seven years, when Captain Duffy sold his interest to his partner and came to Barre fifteen years ago, going into the granite cutting business. He acquired valuable quarry property and he remained in active business, until 1898, when he sold his quarry to E. L. Smith & Co., and retired from the granite business altogether, devoting his time to real estate transactions.

A fatal accident occurred August 30, at the Milne, Clarihew & Gray quarry when Daniel Wright, a quarryman, was the victim. They were hoisting a large block of granite when the heavy chain snapped asunder and one link of the chain struck the man in the back of the head, crushing his skull like an egg shell.

Very Large Mausoleum Job.

Littlejohn & Milne are getting out one of the largest mausoleum jobs ever cut in Barre, and not only is it a mammoth piece of work but it contains exquisite workmanship. It is for the Littman

family and is to be set up in Woodlawn, N. Y. It covers a ground space 41 ft. 7 in. by 7 ft. 8 1/4 in. The first platform forming the three steps is cut from a solid block 15 ft. 10 in. by 7 ft. 8 1/4 in. and after being cut weighs 30 tons. The entire job weighs 700,000 pounds. In front are four Ionic columns. Above this is an architrave and frieze with triglyphs surmounted by heavily moulded cornice. The doorway is heavily moulded as is the lintel over the doorway surmounted by massive corners. In the pediment of the gable is a richly carved palm leaf and laurel wreath entwined. The sides are similar to the front and each is provided with a heavily moulded window.

George Mutch, of Mutch & Calder, has just returned from a visit to the St. Louis Exposition and to granite dealers on the way.

The Smith, Whitcomb & Cook Co. have built one of their largest polishing machines for Jones Bros. and also another big one for Guidici Bros. James Brodie & Son, of Iberville, P. Q., have just sent in an order for a large boom derrick.

E. A. Bugbee, of Bugbee & Alexander, left on September 6, for a two months' western trip. He will stop at St. Louis before he returns.

Secretary Taft Visits Barre.

Mayor Barclay entertained a distinguished visitor at Barclay Bros.' granite plant last week, the guest being Secretary of War William H. Taft. Secretary Taft was greatly impressed by the magnitude of the gravestone business at the Barre end of it.

The Shortage of Cars Noted.

The only trouble I found at Robin Bros.' plant this month was a shortage of cars. Business was good and in addition to several vaults I found them getting out some nice monumental work. Alderman John Robins was getting his end of the business in shape so that he could leave for a few weeks' sojourn in the West and at St. Louis.

In the Western Caravan.

J. P. Corskie has joined the caravan that started West this month, only Mr. Corskie went by himself and he plans to bring home enough work to keep the house warm next winter.

James Campbell, of Mortimer & Campbell, will cast his optics upon the Barre exhibit at St. Louis this week.

Smokes a Clay Pipe Now.

I found Mudgett, of the Harrison Granite Co., enjoying solid contentment in a new office. The clay pipe he was smoking was, he said, the best he could afford since the Barre-Montpelier baseball team, for which he was a "rooter," got to losing. The new office addition, with its new furniture, shows there is something doing in up-to-dateness at the Harrison.

Has the Sympathy of Other Bald Heads.

Dan McLeod, of Emslie, McLeod & Co., didn't show up for a few days after the August issue of ROCK PRODUCTS came out. Dan said he hadn't

taken his hat off for several years lest people should know he was bald headed, and then to be shown up at last on the front page of the paper was pretty hard lines for poor Dan, especially as every one of the others had their hats on.

A new emergency hospital has just been founded in Barre. A good thing to help along.

P. F. McCarthy, national secretary of the Quarry Workers' Union, has just settled the strike trouble in the granite quarries of Chester, Mass.

Beck & Beck were shipping a carload of polished work to Portland, Oregon, when I called on them. They have secured a Western agent, P. Mockenhaupt, of 240 Oak Street, Chicago, who will look after all of the Western business of the firm in the future.

Advertising Always Helps.

Rizzi Bros. have an attractive sign over their new quarters. A good plan. Pass it along.

I saw Mr. Wallace, of the Union Graphite Co., of Hardwick, the other day. Business is booming over there. This company is shipping two nice hammered jobs to Hamilton, Ohio, this month.

Adding New Sullivan Machines.

T. W. Egan is installing a large Sullivan air compressor at his quarry.

D. K. Lilley, of Montpelier, is putting in a large Sullivan air compressor at his cutting plant.

Sullivan drills have been put in at the quarries of Wells, Lamson & Co., Littlejohn & Milne, McIver & Mathieson and the Langfeld Granite Co.

A. J. Langfeld, of the Langfeld Granite Co., has moved his family here from Fitchburg, Mass., and will make Barre their home.

Mr. Archer, of Stubbenville, Ohio, and a representative of Preston & Co., of Mansfield, Ohio, were among the visiting dealers in town last week. It is understood that Preston is to establish an office in Barre.

J. Frank Huntoon has transformed his cutting business to one of W. A. Lane's sheds.

Phenomenal Revival of Business.

McDonald, Cutler & Co., have just sold a monument for the Cummings' family at Fitchburg, Mass., that is a very nice design. It stands 29 feet high. Mr. Cutler says he never saw business pick up as it has in the past few weeks.

Parry & Jones are still getting out some attractive rock face jobs along with their other work.

Machinery Lines Getting Active.

W. A. Lane shipped three polishing machines to Cincinnati, Ohio, last month.

Mortimer & Campbell had one of the most attractive jobs that was seen under the hammer in any of the sheds this month. The job is for Woburn, Mass., and is a particularly unique design. It has three bases, the first being 8x5—4x1. At each corner is a fluted pilaster carved at the top and bottom. The cap at the top is different from the ordinary. It is cut with mouldings with heavy scrolls at the ends, running down to a concave.

HIGH CARNIVAL.

Annual Clam-Bake Given by the R. C. Bowers Granite Co., to Patrons and Friends.

A ROYAL GOOD TIME UNDER THE MAMMOTH TENT.

MONTPELIER, Vt., August 27.—Among the broad-gauge men of this section of the country Riley C. Bowers holds a seat of honor in the front row, and those who have been so royally entertained so many times by the R. C. Bowers Granite Co., at their annual clam bake can not fail to experience a feeling of affectionate remembrance whenever they hear the name "Bowers" mentioned.

As ex-Mayor John H. Senter, of Montpelier, once remarked: "I tell you, boys, we don't half appreciate what Bowers does for us."

The R. C. Bowers Granite Co. holds a position of great importance in the granite world, not only in America, but across the Atlantic as well. The officers of the company are: R. C. Bowers, of Montpelier, president; Fred E. Smith, of Montpelier, vice president; C. C. Bancroft, of Montpelier, treasurer, and H. A. Bowers, of London, England, secretary. The company has three offices in Montpelier, Vt., Aberdeen, Scotland, and London, England. The first is under the management of R. C. Bowers, and handles supplies to the granite trade in addition to their wholesale granite business. The Aberdeen office is in charge of James Burley, formerly of the Barre granite firm of Burley & Colder. The principal end of the business there is the sale of carborundum and the graphite trade for polishing, and they are also importers of Scotch granite. At London, H. A. Bowers, the secretary, dispenses carborundum wheels for grinding in all the big machine plants of England, including the British shipyards. The company has been designated by King Edward VII to use the title, "Contractors to His Majesty."

For the past ten years it has been the custom of the company each summer to invite all their patrons in Barre, Montpelier and vicinity and to come with their employes and enjoy a genuine Rhode Island clam bake served in an immense tent owned by the company and set up in some appropriate grove midway between Barre and Montpelier.

The boss artist on these occasions has always been Captain Joseph Wilson, of Providence, R. I., and he has always maintained the Bowers reputation by giving good goods to all who have been fortunate enough to sit at the hospitable board and eat his clams and lobsters.



SOME OF THOSE WHO ENJOYED THE BOWERS CLAM-BAKE THIS YEAR.

ROCK PRODUCTS.

This year 425 of the employers and employees of this vicinity received from the R. C. Bowers Granite Co. the following invitation:

MONTPELIER, Vt., August 22, 1904.
Dear Sir:

In appreciation of the very generous share of orders received the past year from the mill owners for polishing material, we take pleasure in extending to you and your polishers an invitation to a

A RHODE ISLAND CLAM BAKE.

at Fountain Park, Saturday Afternoon, August 27, 1904, at 2:00. Leave Electric Cars at Marvin Farm House. Come and bring a good appetite with you.

Yours, etc.,

R. C. BOWERS GRANITE CO.

On the afternoon of August 27, 350 of this number had answered to the call, and after a social half hour and a few minutes devoted to the Rock Products photographer, they were ushered to their places at the long tables inside the tent where a brigade of handsome young ladies and courteous young men brought in the good things while an orchestra discoursed sweet music to admiring ears. Here is the menu:

MENU.

R. C. BOWERS GRANITE CO.,

Clam Bake.

Saturday, August 27, 1904.

Clam Chowder.

Clams.

Lobsters.

Green Corn.

Sweet Potatoes.

Watermelon a la Mint.

French Bread.

Anheuser-Busch Tea.

PROF. JOS. WILSON, CHEF, Providence, R. I.

To supply the hungry crowd the caterer had received 18 bushels of clams, 300 pounds of lobsters, 40 gallons of chowder, 400 ears of corn, 3 bushels of sweet potatoes, 15 watermelons, 50 loaves of French bread and Anheuser-Busch tea all they wanted.

THE FIRMS REPRESENTED.

Wells & Lamson, Jones Bros., Geo. Walker & Sons, Mutch & Calder, Moore Bros. & Brault, Z. Macchi, Canton Bros., Bessey Granite Co., A. Anderson & Sons, Stephen & Gerrard, Burke Bros., Young Bros., C. McMillan & Son, Emslie, McLeod & Co.

W. Cole & Son, Milne, Clarihew & Gray, Comolli & Co., Hoyt & Leberveau, Fred Minnie, Harrison Granite Co., I. W. Bates & Co., Milne & Odgers, Thos. Carroll, McDonald, Cutler & Co., E. L. Smith, & Co., J. A. Martinson, Smith & Richards, C. H. Moore & Co., Vermont Granite Co., George E. Bond, Ordway & McGovern, Dewey Column Cutting Works, George Stratton, McDonald & Buchan, Wm. Magee, Adie & Milne, Littlejohn & Milne, Barclay Bros., Robins Bros., Bugbee & Alexander, Robert Fraser, Columbian Granite Co., Doucette Bros., Globe Granite Co., C. P. Gill & Co., American Granite Co., Pioneer Granite Co., E. E. Craven & Co., Bonazzi & Bonazzi, Mills & Co., Sweeney Bros., Dan Emery, Lynch Bros., Ryle-McCormick Co., G. R. Bianchi Co., Dillon & Haley, Capital Granite Co., McCann & Maroni, D. K. Lilley, Devine & Burns, Cannon & Slack Co., Cross Bros., Marr & Gordon, J. P. Corskie & Son, D. B. L. Granite Co., J. J. Sullivan, Barker Granite Co., Gearson & Beckett Co., Davis Bros.

Souvenirs for All.

When the repast was finished each guest as he passed out through the tent was presented with a souvenir pipe and a package of tobacco and most



The only Riley C. Bowers on the Clam Bake Day in Front of his Tent.

of the old timers remained to smoke up to days gone by, while the young ones made haste to the baseball grounds near by. All of them carried away a good word for Bowers and a hearty appreciation of the broad gauge method of the R. C. Bowers Granite Co.

The E. B. Ellis Granite Co. has completed its new shed at Northfield, Vt., which is to be operated by an electric motor, and they have begun operations.



THE BOYS AT THE TABLES WAITING FOR CLAMS.

Spalls From Vermont.

The stone industry of Vermont has attracted a great deal of interest during the last few years, not only on account of the rapid development of its marble quarries but also on account of the even more rapid development that has been made in the granite industry. The general formation of the State is very peculiar on account of the fact that these two kinds of stone, so entirely different in their origin and formation, should be found lying so close together in the State. In a general way it may be said that the marble formation extends in a long line running almost the entire length of the State on the western side and within a few miles of Lake Champlain. The marble varies in color and general formation in different parts of the State, from a deep red, coarse-grained marble found in and around Swanton to the clear, fine-grained white marble found in the southern part of the State.

In the same general way the granite formation is found to extend, with interruptions here and there, from the northern boundary of the State on the eastern side down through and very close to the boundary line on the southern end, this line taking in such quarry formations as are found at Beebe Plain on the north, Woodbury, Hardwick, Barre and Bethel in the center, and Dummerston in the south. The general color and texture of the stone is nearly the same throughout, being, however, of a coarser grain toward the north and of a medium texture and shade of blue-gray, as found in Woodbury and Barre, and changing to a very clear white and hard texture toward the south at Bethel.

While the development of the granite industry of Vermont is of comparative recent date, the State has already come to be recognized as at the front in this industry: not simply on account of the superior quality of the granite it produces but also from the fact that it is far ahead of any other section of the country in the advance it has made in the use of improved appliances for producing the stone. Nowhere in the country can so complete, up-to-date plants be found, both for quarrying the stone and for manufacturing it into finished work, as is found in the best quarries and cutting plants of Vermont. A trip through one of these up-to-date plants is certainly a revelation, not simply to the average citizen but to old and experienced granite men as well.

There is perhaps no plant in the country of which this may be more truly said than of the plant of the Woodbury Granite Co., which operates a cutting plant at Hardwick, with quarries at Woodbury and also a branch cutting plant and quarries at Bethel, Vt. As these plants are the most modern of any of the larger plants, and at the same time are unquestionably the largest plants in the country under a single management, a trip about the quarry and cutting plants is of special interest as representing the most advanced methods in the granite industry. This company controls from twelve to fifteen miles of mountain railroad running from Hardwick to its quarries at Woodbury, and reaches the highest elevation of any railroad in the State. The grades are such that special mountain climbing engines are required. The tracks run under all the derricks at the quarries, thus reducing the expense of handling the product to a minimum.

Remarkable Advance in Quarry Methods.

The Woodbury quarries are remarkable on account of the fact that the granite lies in the form of a small mountain, varying from 250 to 400 feet in height above the surrounding country. The granite itself lies in what is called heavy sheets, varying in thickness from 5 to 30 feet, and these sheets usually lie in horizontal beds. The appliances for getting out the product are of especial interest as showing the advance made in this art. Forty years ago the usual method was to drill small flat holes along the line of the stone, into which were driven flat wedges of hard wood. These wedges were then allowed to soak full of water and the expansion of the wood would finally split the stone. To-day most modern plants are equipped with steam derricks, varying in capacity from 10 to 75 or even 100 tons. It is not unusual for the quarries at Woodbury to make breaks in the granite sheets running in length nearly from 50 to even 300 feet as the first step toward loosening up the stone in order to break it up into sizes required. After making such breaks the stone is then drilled into sizes required with drills of large

size operated by compressed air, and finally broken into the smaller sizes with the use of hand drills also operated with compressed air. Into these small holes which are about 3 in. deep are then driven small steel wedges. These smaller air drills are a very recent invention and have already proven to be a great saving, as one man with such an air drill can do the work of four or five men drilling by hand.

After being broken into the required sizes the stone is then transported by train to the cutting plant at Hardwick, in which are to be found all of the latest improved machinery used to-day in the manufacture of granite. Among such machines are lathes for turning work, including a lathe capable of turning single columns weighing from 30 to 40 tons. McDonald surfacing machines for planing smooth surfaces, several gang saws for turning out thin work, a number of surfacers operated by compressed air for turning out plain work, and hand hammers operated by air for turning out molded work and the best class of carving. Here again air has come to the aid of the manufacturer and made it possible for him to do a better class of carved work than was possible before. It is on account of such appliances as these that granite is fast coming into more general use, for the reason that such outfits make it possible to turn out a given amount of finished work in less time than before and at the same time do it for less expense.

The granite produced at Woodbury is of clear blue-gray, remarkable for its freedom from imperfections. The Woodbury quarries are also remarkable for the extent of the deposit and for the fact that they can produce a larger quantity of heavy work in the same given time than any other quarries in the country. This company is now at work on the State capitol building for Pennsylvania, which is one of the largest contracts that has ever been let up to the present time in granite.

The White Quarry at Bethel.

This same company also owns and operates a very valuable quarry of white granite located in Bethel, Vt. They have already built a complete cutting plant at Bethel, and are equipping quarries with the expectation of doing a large volume of business in this granite. The granite has already come to be recognized as one of the most beautiful building stones to be found anywhere, and is in great demand for the highest class of building work. It presents all the beauty of effect that can be secured from the finest grade of white marble, while at the same time it has all of the enduring qualities of the best grade of granite. The formation is remarkable for its absolute freedom from imperfections and from the fact that it is uniformly of a clear creamy-white color, which distinguishes it from every other granite known to-day. There is an unlimited amount of the stone to be found in the deposits at Bethel, and it is safe to say that in a very short time the industries there will develop very large proportions, while at the same time it can be used only for the very best class of building work owing to the fact that it is a very hard stone and is difficult to quarry. This makes it more expensive than the regular run of granites, but its superior quality is so generally admitted that it is bound in a short time to lead all the other granites where superior excellence is placed above everything else. A strong point in connection with the Bethel stone is the fact that the texture is very hard and compact, which makes it remarkably impervious to moisture and reduces absorption to a minimum. This quality in the stone makes it much more durable as a building material and also renders it less liable to stain. Many experts who have examined this granite carefully have come to regard it as an ideal building stone where beauty of effect and durability are placed above other considerations.

White Granite Being Used for Buildings.

It will be recognized that the white granite referred to in this article is the same stone that has been selected for the exterior of the new Union Depot at Washington, D. C. This selection was made after a very careful examination of the stone at the Bethel quarry, owned and controlled by Messrs. Ellis & Co., identically the same stone as that just described in the Woodbury Co.'s quarry, and with the facilities for getting out and cutting this stone, it is possible that, the commission having in charge the erection of the new municipal building may be able to avail themselves of white granite. Having satisfied themselves regarding this stone, and accepted it for the new union depot, no further in-

vestigation is necessary; if there is money enough to pay for it, it goes without saying that Washington can have a municipal building as fine as any city in the United States; with this white granite, all that the architects intended to produce in effect would be equally as good as by using marble.

It would appear that other officials having in charge the erection of new public buildings, authorized with liberal appropriations by Congress, should inform themselves of the apparently new product.

We can conceive no more beautiful group of buildings that could be presented to the eye, if the proposed office buildings to be erected for the members of the Senate and House of Representatives were constructed with white granite; flanking as they would the Capitol and Congressional Library, the effect in color, and grouping would be artistic. Doubtless the architects in charge of the erection of these buildings will be glad to know that a white granite can be obtained; believing as we do that their intention is to use marble, which would increase the cost of these buildings, and at the same time obtaining no better architectural effect and a less enduring quality of stone.

We also believe that the parking commission will give attention to this stone; two of this commission, Messrs. Burnham and McKim, have already accepted it, the first as the architect for the new Union Depot in Washington, and the latter who has used it in constructing the Payne-Whitney mansion on Fifth Avenue, New York City.

The Norfolk Granite and Marble Co., of New Canaan, Conn., has been incorporated with a capital stock of \$57,400.00, this amount having been paid in property. Incorporators and officers of the new company are: George Green, president; R. I. Cressy, vice president; George A. Marvin, treasurer, and Samuel G. Camp, secretary.

Prosperity at Stonington.

STONINGTON, Me., September 5.—Ryan and Parker have four gangs of cutters in their new shed, and M. G. Ryan & Co., have their new shed nearly completed, the electric light plant being in running order and also their air compressors. Mr. W. H. Goss says: "We are contemplating establishing two air compressors on our Crotch Island quarry this fall for drilling, etc."

Better Prospects for Fall Trade.

BEVERLY, S. C., September 2.—The Beverly Granite Co. say their trade this year has fallen off very materially, but the prospects for the fall seem to be good.

New President of the Quincy Association.

Mr. John L. Miller, the newly elected president of the Quincy Granite Association, is not an unknown quantity to the trade, for he was president of the association in 1893 and 1894. He says that he "was once a member of the Granite Cutters Union, so that he has one foot on each horse." We think the Quincy association is to be congratulated on the selection of Mr. Miller, and we know that his rulings will be founded on justice and tempered with mercy, and if there is any man in the whole Quincy association who can elevate and further its usefulness, it is this same persistent and successful workers, in any line that he has ever yet undertaken.

Activity in the Southern Field.

FAITH, N. C., September 3.—J. T. Wyatt reports the granite business in a flourishing condition, working a large force of men and shipping granite daily. A carload of mill stones has just gone out to Birmingham, Ala., three and one-half feet in diameter to grind iron ore for paint, and a lot of fine curbing has gone to different parts of the country. They have also recently sent out a carload of thirteen engine beds to South Carolina.

Had a Pleasant Vacation Trip.

President W. S. Alexander, in company with Mrs. Alexander, has been renewing his honeymoon days down in Hollowell, Maine. They were away two weeks and a portion of the time was spent in Quincy where they were royally entertained by the Quincy granite people. The manner in which the Quincy people put out the glad hand is greatly appreciated by the worthy president of the Barre Association.

Sand.

It is reported that the Chicago Gravel Co., Chicago, Ill., has increased its capital stock from \$50,000.00 to \$75,000.00.

The America Silica Co., Warren, Summit County, Ohio, has been incorporated with a capital stock of \$100,000.00 by: William J. Marson and others.

The Old Dominion Sand and Gravel Co. has been incorporated at Washington, D. C., with a capital stock of \$100,000.00 by: James M. Miller, John M. McClintock and Frederick W. Evans.

The Dallas Lime and Gravel Co., has been incorporated at Dallas, Tex., for the purpose of dealing in gravel, etc. The incorporators are: T. S. Miller, Jr., L. A. Stemmons and S. A. Stemmons.

The Nichols Sand and Gravel Co., Milwaukee, Wis., has been incorporated with a capital stock of \$2,000.00 by: Christ Sarnow, Jr., E. C. Nichols and Wally R. Sarnow.

Reports from Chicago, Ill., state that the Illinois Gravel Co., Princeton, Ill., has been incorporated with a capital stock of \$5,000.00 to deal in building materials, etc., by: H. H. Priestly, G. F. Scott and L. H. Scott.

The Independence Sand Co., of Phillipsburg, N. J., has been incorporated with a capital stock of \$10,000.00. The incorporators are: Elmer R. Richards, C. Frank Schwep, Easton, Pa., Sylvester C. Smith, Phillipsburg, N. J.

The Muscatine Sand Co., Muscatine, Iowa, which has had a large barge under construction for some weeks, reports that this barge has been slid into the Mississippi river. Charles E. Richard and G. W. Porter were sponsors.

Reports from Little Rock, Ark., state that Chatwin Bros. and Clegg Sand Co. has been incorporated with a capital stock of \$10,000.00. The incorporators are: A. G. Chatwin, Samuel Chatwin, C. L. Chatwin, T. N. Clegg and C. N. Lemon.

The Detweiler Sand Co., Cordelia, Pa., has resumed operations and is said to be shipping a couple of cars a week. The sand is conveyed from the mine to the crusher, which is a distance of about one mile, on a cable. It works automatically, the loaded car going down draws the empty one up.

The Des Moines Sand Co., Des Moines, Iowa, had its building at the foot of Eleventh Street collapse recently by reason of the settling of the levee. It is said that the two-story building is totally wrecked but will be rebuilt. The damage done the plant may reach \$5,000.00 but is covered by insurance.

The Ottumwa Sand and Stone Co. has been organized and filed articles of incorporation with the Secretary of State. The company is capitalized at \$10,000.00 and will have its headquarters at Ottumwa, Iowa. C. E. Norton, Gus Applegren, D. D. Smith and Frank J. Lynch are the incorporators.

It is reported that the National Silica Co., Detroit, Mich., which has been incorporated has the following officers: Emery W. Clark, president; R. B. Burrell, vice president; Frederic Towle, secretary and treasurer. The capital stock is \$75,000.00, owned by the officers of the company and said to be all paid in.

The Winchester Gravel Co., Winchester, Ind., was incorporated recently for the purpose of excavation of gravel, sand and stone, with a capital stock of \$3,000.00. The stockholders are: L. L. Moorman, J. C. Devoss, J. W. Macy, U. B. Hunt, George Robbins, George Yeager, Wm. Hippelheimer, Os Fields, J. T. Moorman, J. P. Goodrich. The officers of the company are: L. L. Moorman, president; J. C. Devoss, secretary-treasurer and general manager.

ROCK PRODUCTS.

Quarries.

The National Quarry Owners' Association.

D. McL. MCKAY, Chicago, Ill. President
 W. H. WALLACE, Bay Port, Mich. First Vice President
 F. A. BROWN, Aberdeen, S. D. Second Vice President
 S. M. HALL, Bucyrus, Ohio. Third Vice President
 E. H. DEFEBAUGH, Louisville, Ky. Secretary-Treasurer

Official Organ, ROCK PRODUCTS.

INDIANA OOLITIC BELT.

Interview With the Leading Quarrymen and Producers of the Great Lime-stone Industry.

BLOOMINGTON, INDIANA.

BLOOMINGTON, IND., September 2.—A roundup or review of the opinions and statements of the various manufacturers and quarry operators seems to indicate that while the cut stone business has been pretty good all summer it has been of the hand to mouth variety, and there are very few large jobs in sight, jobs such as tie up a year's output. The movement in sawed and finished stone has been heaviest. Last year at this time block and scabbled were heaviest. While there has been a considerable demand for block it has not been as heavy as anticipated. In consequence of this, while most quarries have been working full time they have been accumulating stock ahead for ship-

ment and unless the demand increases instead of decreasing, as some things seem to indicate will be the case, some of the quarries will either curtail output or shut down very early for the winter season.

With perhaps one exception the mill men say they are quite busy, but when questioned further they admit that the amount of work contracted for future delivery is light, notwithstanding most of them have more actual work on hand to-day than at the same time last year.

It seems odd that the mills should all be so busy, since quite a number of new ones have been put in commission in the last year, and several more are in process of construction. This is probably due to the fact that the purchaser who is often a mill owner at some distant point, realizes that it is cheaper to have the stone sawed at or near the quarry than to move any waste product very far. Where the freight exceeds 8c per 100 pounds it would be better to have it sawed at the point of production when prices run as they do now.

Stone is worth here now in the rough 15 to 18c per cubic foot f. o. b. car at quarry. 30c sawed in two sides, and 45c sawed on four sides. Prices have held firm all summer with possibly a few weak points when a few contracts were placed under ruling prices. Prices especially on mill work are plenty low and should stiffen rather than weaken.

One of the busiest firms in the city to day is the Central Oolitic Co., with William Blair in charge. This firm is one of the few which finish the stone ready to lay up.

While we were unable to see any one from the Eagle Stone Co. it is reported that they have put a mill in operation and are doing nicely.

Edwin Corr, manager of The Crown Stone Co., says they have their quarry fully opened up and that the new mill of McMillan & Son, of Chicago, which is being built close to their property is nearing completion and he expects them to be in operation by October 1, with a six-gang mill designed to have three more gangs added if they are needed. This mill will use the output of the Crown quarry. Mr. Corr also says that business seems to be pretty slow generally in the oolitic belt.

At the Monarch property Superintendent Allen is not crowded very hard on the quarry but the mill is being worked to its limit on a lot of hurry up orders for sawed stock.

A. J. Thompson, the well known jobber and contractor, who is affiliated with a number of mills, has been very busy getting out the stuff for a number of good contracts, among which is the Reid Memorial Church, at Richmond, Ind.

Frank Mathews' new mill at the Empire quarry is about half finished.

Wm. Johnson, manager of the Chicago and Bloomington property, started up the new mill September 1.

The Crescent quarry has been running all season with Fred Mathews keeping a careful eye on things. A great deal of this stone goes to the various Ellettsville mills.

Out at the Buffalo quarry George Danforth has been stripping and getting things in good shape for operation.

The new mill of the Hunter Bros., which was started this spring, has run right along and is doing good work.

At the Giant quarry the side track was put in a few months ago but we were unable to learn how far operations have progressed.

At the offices of the "Big Five," Treasurer D. K. Miers met us with a smile and said that their properties were all being worked hard at present but that the mills were more busy than the quarries. It is probable that a new mill will be built this winter out at the Mathers' quarry.

We were unable to find O. M. Fulweider, of The United States Oolitic Co., but hear that his quarry is running, and he is busy promoting other companies to open up new properties.

The National Stone Co. is very busy and Mr. E. S. Fraser states they have turned down orders and that they have sold a good deal of block to New York this year.

Henry Woolrey, of the "Big Five," has taken to the riding of bucking broncos for his health. He says, however, that it is all off just as soon as he begins to feed that bronco of his apples. The beast likes Henry so well now that he is just like a kitten and wants to be petted.

STEINSVILLE OPERATIONS.

J. Hadley & Sons, at Steinsville, have been running night and day for the last few weeks. Griswold, at the same place, is also quite busy for the present.

The Steinsville and Bloomington property has changed hands within the last two weeks. The George W. Henley Co. has taken hold and the mill has been kept going right along and current report says the new company will operate a quarry also.

No one seemed to know much about the consolidated, but you can depend on Capt. D. McL. McKay to keep things stirred up.

BEDFORD CONDITIONS.

BEDFORD, IND., September 3.—Conditions here seem somewhat similar to those at Bloomington. Practically all block shipments to the East have stopped on account of the strike conditions in New York. The heaviest shippers of rough block quit three or four weeks ago and one of those firms says they sent the last car of this class which has left Bedford. Nearly all cut stone contractors in the East have filled their yards so there will be but a light demand for New York block for several months after an adjustment of the strike.

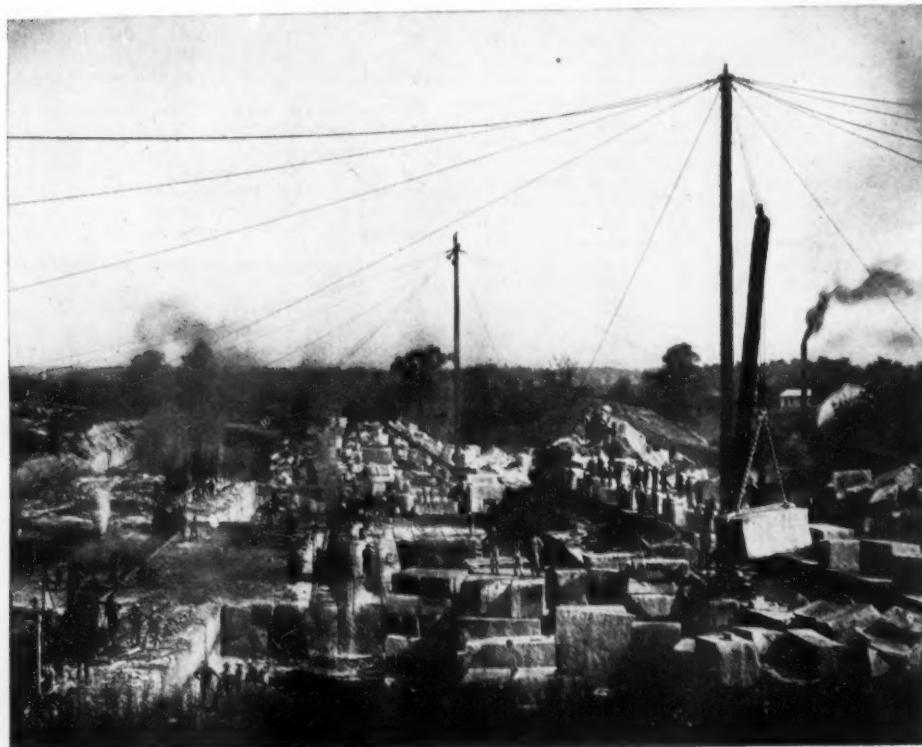
The demand for sawed stock however, continues very strong and every quarry with mill facilities, is crowding the stone through the mill as rapidly as possible.

This summer's business has been peculiar. It has been made up largely of rather small orders placed at the last minute, many of them by wire, and all demanding immediate delivery. Quite a number of large jobs have been figured on but only a few of these have been closed up.

Only a small percentage of the firms have contracts on hand which will keep them busy all winter, yet in view of the nature of the summer's business it is likely that all the mills will be kept busy till late in the winter at any rate. The quarries, however, will shut down early if Eastern conditions continue and there is not an increased movement of block stuff.

Prices have held firmer and a trifle higher here than at Bloomington, owing to the wider reputation of stone quarried at Bedford, and Bedfordites claim that the stone is enough better, take it all around, to command a better price than any other oolitic stone.

R. F. McKinley, secretary of the Climax Stone Co., has recently invented a rapid stroke gang saw which introduces several improvements as to space required, method of feeding down as the saw cuts and numerous other devices.



Mathers Stone Co., Bloomington, Ind., Train of Nine Cars of Scabbled Stone.

C. S. Norton was recently awarded the contract for the stone for the War College at Washington, D. C. The stone is to be Norton Blue which is well known in Washington, and the amount to be used will be about 50,000 cubic feet. The first carload has already been cut by William Bradley & Sons, who will do all the finishing.

The quarry of Wm. M. Matthews, which was opened up recently by the oldest and probably the best informed quarry superintendent in the district, John Torphy, has been shipping good stone for about thirty days.

The new Furst & Kerber quarry, which has opened up under the able guidance of Mr. W. R. Fultz, is now ready for business, and stone has been shipped for the firm's own use. The new mill at Furst & Kerber, which was started some time ago, is now showing rapid progress. The concrete foundations are all in, except for the boilers and engines. Owing to the large size of the plant and the nature of the ground, numerous large piers were necessary. All are of concrete, built by the company, having put in a mixer, crusher, engine and boiler for this purpose. The first two bents of the main building are now up, and only a few weeks will be necessary to enclose it.

The plant will have a diamond circular saw which was built by the George Anderson Co., of Canaustie, Scotland. The saw is already here and will be set up as soon as the plant is finished. The large travelers to be put in will all have electric cranes built by the New Albany Manufacturing Co. The plant when completed will be one of the large ones and one of the most modern in the district.

The Meyers circular diamond saw, which was developed at the plant of Wm. Bradley & Son, is still doing good work and another has been put in at the plant of Fred Andres in Milwaukee, Wis. A number more have been sold and are in process of construction, so we are told by Mr. Wallner.

George Dugan, who is well known in the stone trade for what he did to those who tried to do him, is putting in a double sawing machine of the circular diamond toothed type built by Andrews & Co., of Scotland. It will take 20 to 25 horse power to operate both of these circle saws at once, making two cuts just as quick as one could be made.

The Bedford Foundry and Machinery Co. has invented and patented a derrick propeller device which is attached to their derrick equipment and is operated by a lever at some point as the power levers, thus saving the labor of one man. A number have been tried and found eminently satisfactory to the user.

John A. Rowe is at it again. He has now set aside a corner of his shop for the evolution of a menagerie. If you have a few minutes when in Bedford go see John's animals and how he makes them grow. John frequently gets ideas that are all his own. They are usually catchy ideas, too.

Ed Thornton, manager of the Bedford Steam Stone Works, was hard at it and was lamenting the fact that fairs and holidays would persist in coming along and taking the men away from work when his mill is so busy. Last week was fair week at Bedford.

Bedford stone is useful every where and we hear of all sorts of uses for it. The latest is the manufacture of furniture from it for parlor, porch or yard. Chairs, settees or stools are made in either plane or rustic design, and as usual it is John A. Rowe who is promoting this use of the Bedford stone. He does not, however, make up the cushions which should go with them. They look awful nice and cool on a hot day.

Articles of incorporation were recently filed by the Alba Lime Co. The incorporators are: C. W. Appleby, John Rehm and A. W. Shreve, and the capital stock is \$25,000.00, of which \$9,000.00 has been subscribed. The company's place of business is at Farmington, Ark., but its office is at Fayetteville. The purpose of the company is to deal in lime, plaster, cements, barrels, casks, boxes and all kinds of cooperage.

The Bellevue Stone Co., Bellevue, Ohio, is shipping 75 cars of crushed stone a week. The product of the quarry is used in railway, concrete and road making. This company is very successful in making a high grade product for the purposes named.

An English Portable Stone Cutting Machine.

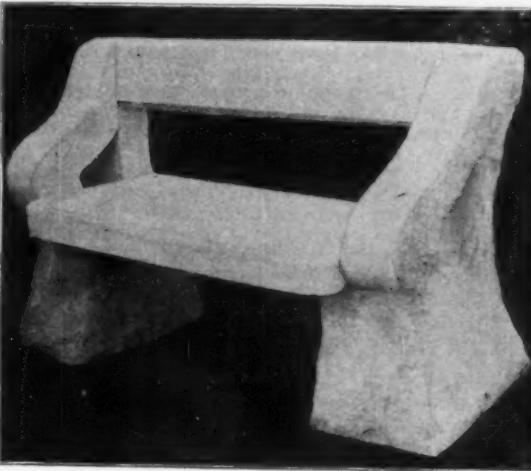
One of the large English quarries has a portable stone cutting apparatus which is found to be a very handy thing to have around. The cutting is done by an endless steel wire which cuts both inward and outward. Water and crushed quartz are used to aid the action required. By the use of what are termed "Rock Guides" the cutting can be done at almost any angle. The whole apparatus is driven by a small gasoline engine, which with the cutting device is mounted on trucks so that it can be moved to any part of the quarry.

Full of Orders for Ballast.

ST. LOUIS, Mo., August 5.—Mr. F. W. Stolle, 5127 Cabonne, St. Louis, Mo., says: "I have been very busy with our quarries, the one located in Missouri and the one in Illinois, both of which are equipped with crushing plants of large capacity and are filled up with orders turning out railroad ballast. At the Illinois plant alone we have been turning out something like 800 tons of ballast a day. Both of the quarries are equipped with all the latest and highest improved machinery."

Under Eighty Feet of Solid Rock.

In the quarry owned and operated by Frederick Shrump, in the Pleasantdale section of West Orange, N. J., there has been discovered under 80 feet of solid rock a tablet bearing the foot prints of some prehistoric animal of enormous size. In



Stone Settee Made by John A. Rowe, Bedford, Ind.

addition to the footprints, it shows the trail of the creature's tail as it dragged along in the mud. No one knows the name of the reptile, but it is some prehistoric monster. This quarry has been operated successfully since 1871, and many of the finest brownstone buildings of the city of New York have been built of the stone from this quarry, which is still in active operation, and one of the largest in the neighborhood.

Investigating Drilling Machinery.

CHATTANOOGA, TENN., August 31.—Mr. William H. Holmes, vice president of the Chickamauga Quarry and Construction Co., states: "We are doing a good quarry business now. For a while orders seemed to be held up, but lately there is an increase in business, and the local stone trade was never better. Over half of the manufacturing plants in and about Chattanooga are increasing their capacity from 50 to 100 per cent. As soon as we can determine the best outfit for the purpose, we will put in air for plug and feather drilling, also machines to bush-hammer and chisel stone; and the present indications are that we may be in the market for a crusher very soon."

The Buffalo, Rochester and Pittsburg Railroad Co. is opening an enormous limestone quarry in the neighborhood of New Castle, Pa. Considerable machinery is being ordered and a big rock crusher will be set up with a capacity of more than 300 tons per day. It is the intention of the company to use a large quantity of the product for the construction of their road, such as abutments for small bridges, culverts, etc., while the smaller rock will be crushed for ballast.

Compare Notes.

I overheard a conversation the other day, which rather amused me. Two stone men were talking about a certain business, which one had sold. The general manager of the concern insisted that the other cut prices to get the business. But after the successful man offered to show his books, the latter seemed to be satisfied, because when you hear the end of the story it was a case of the salesman against the buyer.

The buyer tried his best to get the goods at less than the market price, but Mr. Goodsalesman knew the quality of his stone, and his well known ability to read his man had a good deal to do with the order being placed at the high price, although the buyer led the competitor stone man to believe at a cut price. It pays for the manufacturer to go about and compare notes, as in this case, and as in this case the consumer has to pay the bill, which is no more than right.

George Underhill has been elected president of the Medina Quarry Co., of Albion, N. Y., and he will assume personal direction of the quarry.

The Nicholson Stone Co., Montrose, Pa., claim that their new crushing plant is capable of turning out one and one-half tons of stone per minute.

The LeGrande Quarry Co., Marshalltown, Iowa, have almost completed the rebuilding of a crushing plant at their quarry, and expect to be in operation within a few weeks. The Cady Stone Co., Moline, Ill., has been incorporated with a capital stock of \$10,000,000, for quarrying stone. The incorporators are: John D. Cady, Chas. P. Skinner and Mabel C. Skinner.

W. V. Grubbs, manager of the Portage Entry Quarries Co., Duluth, Minn., reports large contract closed for the "Marquet Raindrop" stone, at Davenport, Iowa, where a new high school, costing \$175,000.00, will be erected shortly.

Thomas Cannon, of Greensburg, Ind., has discovered a fine quality of limestone on his place near Layton's Mill in Sand Creek township. Mr. Cannon will put a force of men to work to develop the quarry at an early date.

Davis & Mayne, Nymore, Neb., are preparing to put in a stone crusher at their quarry. This will, however, not be done until the Union Pacific railroad completes the switch from their line to the quarry.

The Flint Hill Stone and Construction Co., Schenectady, N. Y., has been awarded the contract for the stone for the improvement of the Albany and Schenectady road. Judge Austin A. Yates is the Schenectady representative of the company, and the general manager is T. T. Chase, formerly of Detroit.

Rumors from Waterbury, Conn., indicate that the industry at the brownstone quarries in Portland and Cromwell are about to have a revival, as a substantial demand for the brown stone has sprung up. There is much encouragement among the share holders of the quarry company, which have until recently shrunk to nominal figures.

The Leathem & Smith Co., Seavastapool, Wis., quarrymen, are filling the contract to furnish 1,000 cords of crushed stone to the commissioners of Mason County, Mich. The contractors receive \$4.50 per cord for the material on the dock at Ludington. This makes it very expensive for the road work by the time it reaches the highway, but the people are very well pleased with the results.

The four large establishments owned by Nast Bros., Marblehead, Wis., and located at Marblehead, Knowles, South Germantown and Kewaunee, have merged into one concern which has been incorporated with a capital stock of \$100,000.00. All this is owned by the Nast family. The property consists of five limestone quarries and several lime kilns, of which the aggregate output is very large.

Geiger and Wilhelm, Lima, Ohio, have succeeded to the business of the Western Ohio stone quarry. They are making a specialty of crushed rock and building stone, and their leading product is crushed rock for macadam purposes. They have a capacity of 400 cubic yards in ten hours. Both members of the firm are practical and pushing business men, and they are making a great success of their business, because they are applying modern machinery and up-to-date methods in getting the product from their quarries to the market.

Stone.

LEADING CONTRACTORS.

Sketches of the Plants, the Methods and the Men Who Make the Cut Stone Industry.

PAPER NO. FOUR.

THE CARTHAGE WHITE LIMESTONE.

A striking feature of the rapid development of the stone industry in the West has been the constantly growing favor with which Carthage white limestone has been received. Not only has it met all the expectations of architects and builders, but the public has great appreciation of it as a building material. Geologically speaking, the stone is a member of the sub-carboniferous section. It is highly crystalline and fossiliferous, and contains some of the most beautiful and elaborate of Crinoid relics. It is generally recognized as one of the best and most beautiful building stones found in the Western States. No other rock formation of a precisely similar nature exists west of the Mississippi nor south of the Great Lakes. It is peculiarly adapted for building purposes, both in the rough and dressed form, and for quality, appearance and durability it is excellent. Its merits have been fully determined by its general use in large quantities in the finest residences and business and public edifices in St. Louis, Kansas City, and other Southern and Western cities for the past fifteen years. It has also been largely used in bridge piers, turn-table piers and beds and railroad construction, where, in all instances, it has stood the action of the elements and the pressure and vibration of river and railroad service, and has given entire satisfaction.

Although the product of the quarries is technically a white limestone, it has not the cold, repelling effect of a dead white, as there is a warmth of tint that is very pleasing to the eye. It is easily worked and looks well carved, tooled, rubbed, polished or in rock face. In the latter form it is full of luster and life whenever it is fractured. Its imperviousness to dampness and its resistance to atmospheric changes make it a desirable building stone. It is not discolored by mortars or cements, nor does it in turn stain any other material with which it comes in contact. Like all other marbles it is characterized by having veins running through it, and, as it takes a fine polish and yields a rich color, it is peculiarly adapted to monumental purposes. It is also used extensively for pavement and curbing, and its freedom from attrition, on account of its toughness and hardness, places it in the first rank for these purposes.

(COPY.)

Ordnance Department, United States Army "Report of Mechanical Tests"

Made with the U. S. testing machine, capacity 800,000 pounds, Watertown Arsenal, Massachusetts, April 25, 1900, on four 4-inch cubes of Carthage, Mo., limestone.

TEST BY COMPRESSION.

No. of Test.	MARKS.	DIMENSIONS.			Sectional area. Sq. in.	First Crack. Lbs.	ULTIMATE STRENGTH.			
		Height. Inches.	Compressed Surface. Inches.				Total. Lbs.	Per Sq. In.		
			Inches.	Inches.			Lbs.	Lbs.		
No. 11086	Quality No. 1	3.99	3.98	3.99	15.88	217.200	217.200	13.680		
No. 11087	" No. 1	3.99	4.01	4.00	16.04	219.100	219.100	13.660		
No. 11088	" No. 2	4.01	4.00	3.99	15.98	241.000	244.500	15.320		
No. 11089	" No. 2	4.00	4.01	3.98	15.96	273.400	273.400	17.130		

Correct : (Signed) J. E. HOWARD.

(Signed) J. W. RALLY,

Lt. Col. Ord. Dept., U. S. A. Commanding.

It contains 98.06 per cent. of carbonate of lime, its weight per cubic foot is 185 pounds, and the crushing test shown in the accompanying table attests its great strength.

The quarries were first operated by a company organized in 1884, known as the Carthage Marble and White Lime Co., Carthage, Mo., and this company has done a great deal to popularize the stone for building purposes. In the spring of 1890, they abandoned the manufacture of lime and embarked very extensively in quarrying, dressing and contracting in building stone under the name of the Carthage Stone and White Lime Co., with head offices at St. Louis, Mo., located at Chouteau and Vandeventer Avenues, besides the Missouri Pacific railway tracks, where are located their storage yard and custom sawmills, which are magnificently equipped for handling and manufacturing white Carthage limestone for building purposes. The equipment of the St. Louis plant consists of five derricks and three rapid-moving gang saws which are driven by electricity. The power for this plant is obtained from the Union Power Co., and every convenience and appliance for economy, both of power and machinery is installed, noticeable among which are the roller bearing equipments for the line shafts and other heavy bearings, and it is estimated that the roller bearings alone make a saving of from 15 to 20 per cent. in power.

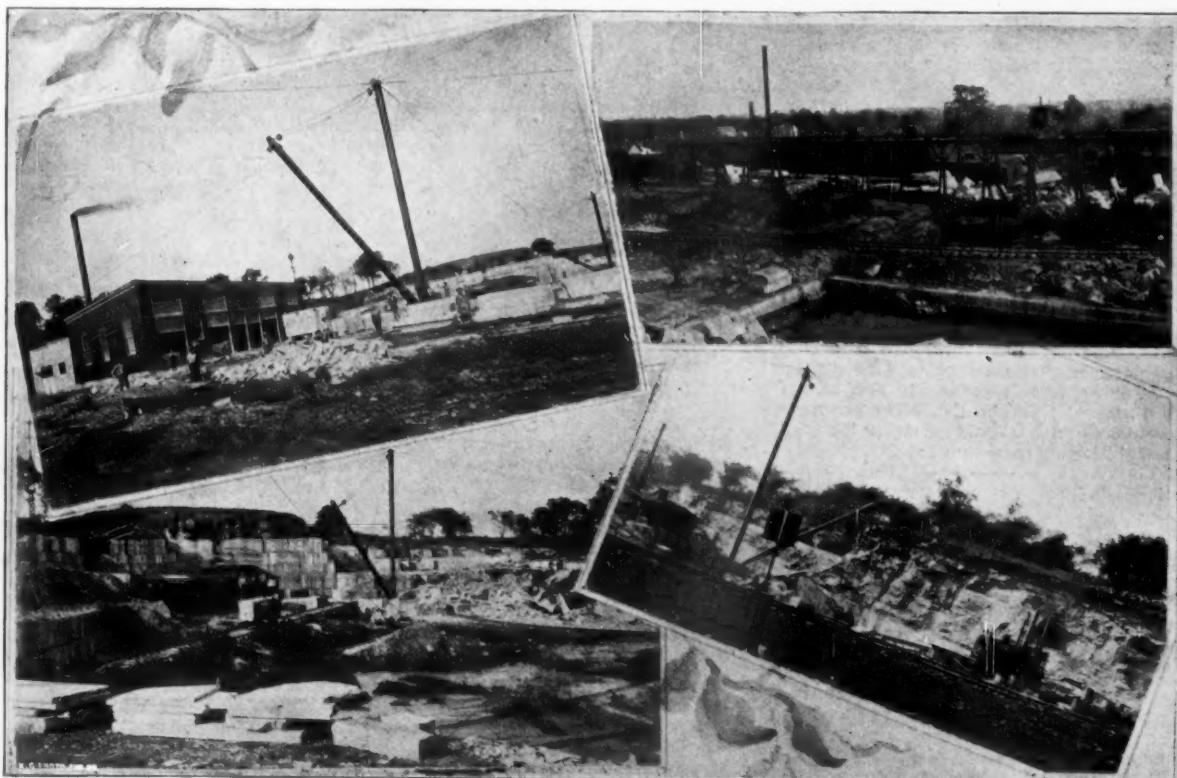
Their plant was formerly located at the corner of Theresa Street and the Missouri Pacific railway

track, but was moved to the present location in 1894, in order to obtain a larger amount of yard room, and to more conveniently arrange the appliances for the rapid handling of heavy mill blocks.

The Carthage Stone and White Lime Co. never contracts to erect buildings, but furnish the stone according to specifications.

The following representative and experienced men are its officers: George T. Riddle, of the Riddle-Rehbein Manufacturing Co., of St. Louis, president; Fred J. Remmers, of the Goesse-Remmers Building and Contracting Co., St. Louis, secretary; H. F. Gruetzmacher, of the H. F. Gruetzmacher Stone Contracting Co., of St. Louis, manager. Henry Hatzfeld is the general agent at Chouteau and Vandeventer Avenues, St. Louis, and Robert W. Jay is superintendent of the quarry and saw mills at Carthage. Phil G. Dauerheim, of the Goetz Lime Co., is a director also. The quarries are situated on the north side of Spring River, on the Lexington and Southern branch of the Missouri Pacific railway. That the company has excellent transportation and shipping facilities is conclusively proved by the output of over 550 cars during the year 1903.

The Carthage white limestone received the first premium at the Omaha Exposition for the best quality of sawed, dressed and carved stone, although there were present at the Exposition many much larger and more pretentious exhibits, and at the Louisiana Purchase Exposition they have a



VIEWS OF PLANT OF THE CARTHAGE STONE AND WHITE LIME CO., AT CARTHAGE, MO.

large lot of samples. ROCK PRODUCTS' representative is indebted to Mr. A. H. Hitecamp of the accounting department of the company's office for the courtesy of showing him about the plant, and giving many interesting details with regard to the history of the company.

The Building and Loan Association of the State of Ohio, will meet in annual convention next August at Dayton, Ohio, when the committee appointed at a recent meeting with the power to act, will submit the final arrangements for a handsome monument to be erected to the memory of A. A. Winters, the founder of association movements in the State of Ohio, to be erected in one of the principal parks of Dayton.

A Great Hoisting Operation.

The large columns which the architects saw fit to place in the Cathedral of St. John the Divine, at New York City, incited a great deal of comment by architects, engineers, quarry owners and granite manufacturers at the time when they were being cut at Vinal Haven, Maine, by the Bodwell Granite Co., mention of which has been made in earlier issues of this journal. They are now exciting further comment on account of the difficulty of raising and placing such heavy pieces of granite, and many people have gone to the location of the cathedral to see this feat accomplished.

Jones Bros., of Barre, Vt., and Boston, Mass., have the sub-contract for the erection of these enormous columns, and the work is under the direction of one of their superintendents, W. F. Holland.

The derrick or lifting arrangements for the handling of this proposition consists of two enormous masts of Washington fir, well guyed by wire ropes and tied together at the top with timbers, leaving sufficient space for the column to be swung in between. These masts are ninety-six feet long and have sufficient weight or thickness that a factor of safety greater than ten is allowed for their strength when lifting the heaviest section of the column, which is ninety tons. These timbers were brought overland from Seattle. The accompanying illustration makes more clear how these columns were handled. Two hoisting derricks were used for lifting the weight and so connected up that even though there might be a difference of speed the strain on each wire rope which carried the load would be the same. The method of gripping the larger columns and attaching the tackle blocks was to leave a three-inch rim of granite on the top of the column. Heavy timbers were bolted beneath this and the tackle blocks attached to this. 14x14-inch timbers were used. In addition to this "Lewis" was placed in the center of the top of the column to which a single block was attached. Three more blocks were attached by wire to the yoke. The column was guided on its way upward by means of a rope around the bottom which was connected with a winch so that it was under control all the time. The columns were raised and placed without difficulty.

The Flint Hill Stone and Construction Co., of Albany, N. Y., was incorporated recently with a capital of \$10,000.00, to operate stone quarries and to deal in all kinds of stone, brick, asphalt and other building material, to construct macadam and telford roads, and do flagging, paving and curbing of streets, also to do general contracting and construction of public work. The directors are: H. Judd

Ward and George B. Fales, of Troy, and Osman F. Kinlock, of 37 Maiden Lane, Albany, N. Y.

Wake Up To Harmony.

A brawny, broad-shouldered German-Frenchman was talking to a Rock PRODUCTS man the other day and said: "We often have an opportunity to take part of another fellow's trade, but I don't believe in that. I think where manufacturers can work together, it is better for all concerned, and when an outsider wants to succeed himself, and desires other people to succeed, we should take a hand and endeavor to see that the other fellow gets as fair a price as possible, rather than making quotations indiscriminately to everybody that comes along, and many of them often figuring that they can get an outsider to make a quotation that is less than a local price, and he will be able to put the local man down. That has been one of the worst propositions in the stone business in the past, and it is time for the cut stone contractors to wake up and realize that with a little harmonious work, we can get more money out of the business."

Widening His Territory.

MARION, VA., August 10.—Mr. R. J. Clark reports that his stone and marble business is in quite a flourishing condition and increasing very satisfactorily, and he is one of the few who are able to keep their collections closed up to a great extent, and his territory is widening all the time. The present year will largely exceed any other in his experience, unless business should fall off to a very large extent.

Will Put in Improvements This Winter.

ROWLESBURG, W. VA., July 30.—The Preston Blue Stone Co. write: "Our business this year has been considerably better than last up to the present time. We have been very busy shipping on orders to Washington, Boston, Philadelphia and New York principally. We have a growing local trade, and when we put in our new mill the coming winter, we expect to do a much larger business than heretofore. We have not put in much new machinery this year, besides a steam drill which is proving quite satisfactory."

The National Soapstone Co., New York City, has been capitalized at \$100,000.00 with the following directors: C. P. Breckinridge, of Pelham Manor; W. H. Blam, of Hastings-on-Hudson; L. F. Goldmann, of New York City.



Raising the Upper Section of a Granite Column for the Cathedral of St. John the Divine, at New York City.

Marble

Strike Situation Continues at Rutland.

RUTLAND, VT., August 30.—George P. Eadman writes: "The strike situation here is little changed, except that it is beginning to dawn upon the minds of some that the blow, which was aimed chiefly at the Vermont Marble Co., has fallen rather on their smaller competitors, that is, the Rutland Florence Co., and the Columbian Co., which companies, by the way, would seem to be deserving of more careful consideration on the part of the men, inasmuch as they are about the only independent concerns in this section that are left to stand between the men and the growing power and monopoly of the Vermont Marble Co. The strike thus far has had no effect on the writer's business. Our quarry is an assured success, and we are producing an exceptionally fine grade of marble for exterior and interior usages. The splendid quality and beautiful colorings in the different layers are in short a surprise to everybody in this section."

A Mineral Curiosity.

Pliable marble is a curiosity little known to the public. In the possession of Prince Borghese some time ago were six slabs of marble which could be bent at will. The peculiarity is believed to be due to the effect of fire. When placed on end they bend backward or forward; laid horizontally and raised at one end they curve; placed like a see-saw on a block of other material the ends droop. They are excavated at Mondragon, near Naples, and have a grain like Carrara marble. The British museum has a similar slab.

Well Thought of Abroad.

The purity and solidity of the white marble from the Rutland quarries is now acknowledged in Europe as well as in America, as we read in the Stone Trades Journal, of London, and all that part of Vermont has been named the "American Carrara." It is as well adapted to the needs of sculpture as to the finer forms of architectural ornamentation, and almost all the statuary now executed in this country, especially if it is intended for a public building, is carved from blocks of Rutland marble. Much of the common Carrara marble is of bluish color, and therefore, unfit for statuary purposes. The Cambrian beds of Vermont, forming headlands and cliffs along the shore of Lake Champlain, extend from Canada southward for about ninety miles. Though nowhere more than a few miles broad, they have a total thickness of not less than 10,000 feet. Included in these beds are thick layers of a beautifully mottled red and white dolomite, now extensively used for architectural purposes.

The Vermont Marble Co., Rutland, Vt., lately purchased the marble property, mill and water rights, from Mrs. Sidney W. Worthy, of Chicago, Ill., situated a few miles north of Middlebury. It is stated that the price paid for same was \$50,000.00. The Vermont Marble Co., by this deal, gets one of the best water powers on Otter Creek, much of which has heretofore not been utilized. It is also reported that the Vermont Marble Co. is negotiating for the purchase of other marble property between Beldens and Proctor.

It is said that a deal has been closed which unites the marble interests of Perry, Iowa, under one management. The Vanlaningham shops pass to C. D. Oldham and G. W. Vanlaningham quits the business entirely. The consideration was in the neighborhood of \$4,000.00.

The Old Dominion Onyx and Black Marble Co., Columbus, Ohio, has reduced its capital stock from \$60,000.00 to \$12,000.00.

J. I. Owen has purchased the one-half interest of F. P. Wynne, in the concern of Wynne & Owen, Princeton, Ind., who are marble and granite dealers. The style of the new firm will be J. I. Owen & Son, Arthur Owen, the son, being the manager.

ROCK PRODUCTS.

Monuments.**Confidence Between Buyer and Seller.**

I happened to be in an up-to-date monument man's office the other day and he was just buying some stone. He bought it from the man because he had confidence in him. He could always depend on getting what he ordered and when he ordered it. He had no trouble with the color of the stone. When he made a contract to do a certain piece of work with stone ordered from this man, he knew it would prove to be just as represented. This is a pretty good rule for the salesman and it creates satisfactory conditions for the man who buys the stone.

A Little Figuring Would Help.

Every now and again you run across a fellow in the monument business who don't know any more about what it is costing to do business than a farmer who tries to run a grocery store without having some one familiar with the business to help him out. The idea of a man going in to the customer and saying: "If you will tell me what So-and-So's price is I will cut his price \$100.00." If it depends on this kind of solicitation to get his business it seems to me there is something weak about him and he is a bad man in the business.

System for Recording Quotations.

I overheard a manufacturer ask for quotations on certain monumental stone from the quarry and I remarked, "How do you keep account of the quotation?" The answer of Mr. Peter, of the Peter & Melcher Steam Stone Works, was as follows: "I have a little system we have been using for several years and have found it quite satisfactory, and it gives us the required knowledge of what we are doing. By turning to the number we can give you weight, cubic contents, cost at quarry, profit, also additional cost put up in the cemetery and if there are any wrinkles overlooked last time there is a memorandum made so that they may be looked up. It is certainly worth trying by any manufacturer who is not using the system."

WEIGHT.....

No.

CUBIC CONTENTS.....

PETER & MELCHER STEAM STONE WORKS.

MATERIAL.....

QUARRIES QUOTATIONS.

Cost at Quarry,	
Freight from Quarry,	
Hauling to Shop,	
Foundation,	
Hauling to Cemetery,	
Family Name,	
Inscription,	
Extra Lettering,	
Erecting,	
Freight to Destination,	
Incidentals,	
Profit,	
Total Cost,	

SOLD.....

TO

ERECTED

The monument recently erected to the late Major General Joseph B. Carr in Oakwood cemetery, Troy, N. Y., and which is the subject of our illustration, is a very exquisite piece of workmanship in design and detail. The whole of the classic structure is executed in granite with bronze medallion portrait, also bronze plates bearing inscriptions of the records and achievements of the famous warrior. This beautiful piece of work was executed by the Flint Granite Co., of Albany, N. Y.

Business Good All Summer.

ADRIAN, MICH., July 20.—A call upon Manager Andrew Anderson, of the Maple City Granite Co., brought out the fact that the monumental business is very good in Southern Michigan. The Michigan Granite Co., who have been trying the sand blast machine for cutting granite, have also stated that the monument business has been very good with them all summer. The Michigan Granite Co. has a very neat and convenient plant right in the heart of the city.

Concrete Monuments.

The manufacture of cement monuments has come to be an interesting matter for the consideration of the dealer who has a call for this cheap and quite substantial kind of material. It is said that some very pretty designs have been made of cement concrete, with metal tablets bearing the inscription, but we have not seen any photographs of such work, although there is some inquiry from time to time as to the exact method and material used in the manufacture by progressive men actively engaged in monumental lines. Rock Products would like to hear from some practical concerns who turn out this work.

A Lack of the Element of Skill.

HAGERSTOWN, IND., August 12.—M. E. M. Weimer, an old time monumental designer and sculptor, takes the following view of the monumental business: "Thirty years ago when I first began to learn the trade, you could go through the cemeteries of the country and every piece of work erected bore the marks of skill. But, quite different at the present day. Men have gone into the business for speculation; they possess more money than skill. Men who have spent years in learning the trade have to compete with this class of dealers. They always intend to sell the work regardless of the manner in which it is executed or the kind of stock it is manufactured of. All they care for is to get the work placed and collect the money for same. Dealers who wish to serve their customers well, and give them good work and good material, are handicapped by this class of dealers. They not only use cheap stock, but employ the cheapest labor in the country. I wish by some legal manner they could be driven out of the business."

Meeting of Iowa Monument Dealers.

The meeting of the Iowa Marble and Granite Dealers, at Clear Lake, Iowa, on August 24 and 25 was very gratifying in every sense of the word. Aside from being the largest meeting thus far held, it was crowned with splendid results. The social feature, almost essential to these gatherings, was most enjoyable and those present all left with sweet memories of the occasion.

The handsome monument donated by the Kaiser of the city of Rome, consists of a memorial to the German poet Goethe which embodies a statue of the "German Shakespear." A great many artistic Italians declare that the statue is inartistic and out of place. The matter is involving a lot of criticism and talk among folks who believe that they are connoisseurs of art.

The Knights of Pythias, Wheeling, W. Va., will erect a monument in Rose Hill cemetery in memory of their departed members.

O. D. Hardy, proprietor of the Albia (Iowa) Granite and Marble Works, reports a nice supply of orders on hand. Mr. Hardy has the reputation of being a very fine workman and has certainly turned out some very excellent work, both in marble, granite and cut stone.

The Hughes Marble and Granite Co., Clyde, Ohio, have elected the following officers: W. E. Hughes, president; T. W. Dewey, vice president; Fred Curtis, treasurer, and Homer Metzgar, secretary. A dividend of 6 per cent was declared on the capital stock, and the highest confidence of the official management of affairs was expressed by the stockholders.

Mrs. S. S. Green, a prominent official in the Charleston Chapter of the Daughters of the Confederacy, at Charleston, W. Va., states that the chapter will erect a handsome monument to the memory of General Stonewall Jackson, if the city or some citizen or corporation will donate the necessary ground.



The General Joseph B. Carr Monument, by Flint Granite Company, Albany, N. Y.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually.

CHAS. WARNER	President.
Chas. Warner Co., Wilmington, Del.	
PETER MARTIN	First Vice President.
Western Lime Co., Huntington, Ind.	
O. F. PERRY	Second Vice President.
Rockland-Rockport Lime Co., New York City.	
W. B. HILL	Third Vice President.
Ash Grove Lime Association, Kansas City, Mo.	
C. W. S. COBB	Treasurer.
Glencoe Lime & Cement Co., St. Louis, Mo.	
E. H. DEFEBAUGH	Secretary.
ROCK PRODUCTS, Louisville, Ky.	

Official Organ, ROCK PRODUCTS.

Standards of Hydrated Lime.

The standards for hydrated lime adopted at Detroit, both by the meeting of the manufacturers of hydrated lime held on the 11th of July, and by the National Lime Manufacturers' Association meeting hand on the 12th of July, are:

First—A burlap bag dimensions of about 24x40 in. for the shipment of hydrated lime in 100 pound lots.

Second—Long paper sacks of size and grade generally used for Portland cement, for the shipment of hydrated lime in 40-pound lots.

Third—The only quotation to be made shall be a price for each style of package, which includes the cost of the package, and no bulk quotations shall be made.

Fourth—The burlap bags shall be repurchased from the customer at 10 cents each, when returned to the manufacturer, freight prepaid, in good condition.

Fifth—That a discount of one per cent. in ten days, net thirty days from date of shipment, be taken as the standard terms. This discount to be taken on the full price quoted, including the bags, f. o. b. manufacturer's plant or shipping point.

Sixth—That a difference of \$1.00 shall exist between all quotations in paper and burlap, i. e., wherever a manufacturer quotes, say \$6.00 per ton of hydrate in paper, the corresponding quotation in burlap shall be \$7.00.

Another Important Use for Hydrated Lime.

While it has been known to many lime manufacturers that lime, either in powdered form or in solution, was a desirable agent for the destruction of insects on trees and bushes it remains for C. P. Close, agriculturist for the Agricultural Experiment Station of Iowa College, to show its efficiency for this purpose, especially when mixed with kerosene. Mr. Close has given considerable attention during the season to the developing and perfecting of a new remedy for sucking insects, especially the San Jose scale.

Hydrated lime, in the form of limoid, from the Charles Warner Co., at Wilmington, Del., is used as a basis of all mixtures tried. It was found that hydrated lime had great absorbing properties for kerosene, and it was known that kerosene was destructive to this class of animals. Four pounds of hydrated lime take up one gallon of kerosene. This mixture was used with water. A formula which worked well was: Kerosene, 2½ gallons, limoid or hydrated lime, 10 pounds, water, 22½ gallons. The best way to mix is to pour the kerosene in a vessel, add the limoid and stir with a paddle until thoroughly mixed to a thin sloppy mass, then add small amounts of water and stir until the oily mass is in thorough suspension, then add the balance of the water and mix. This moisture is easily sprayed provided foreign matter is kept from the nozzle of the spray and the mixture kept well agitated. The addition of rosin soap and Bordeaux mixture was tried and both gave

desirable results, but did not seem to be materially more effective than the kerosene-limoid mixture alone.

These Mixtures Are Easily Made and Sprayed.

"The ease and convenience with which these mixtures are prepared must commend them to fruit growers. There is no heating required; no preparing of stock solutions, as with kerosene emulsion; no boiling as in making the lime-sulphur-salt wash nor any caustic action on men and teams as is experienced with this mixture; no disagreeable odor such as whale oil soap emits. In fact there is no more unpleasantness connected with making and spraying these new mixtures than there is in making and spraying Bordeaux mixture. A large or small amount can be prepared in a few minutes. When properly made and agitated they can not clog the nozzle."

Crude petroleum was found to be less effective. In the spring season a stronger mixture than that given above may be used very effectively, but much stronger than this should not be used during the summer time. A lime-sulphur-salt wash was tried, but, owing to the chemical change between the lime and the salt, the caustic soda which developed in the solution was found too active in the destruction of vegetation. The addition of rosin soap—one quart to 25 gallons—was considered desirable because it increased the spreading and sticky quality of the mixture. Copper sulphate, Bordeaux mixture, salt and sulphur, as auxiliary ingredients, were not found to be the most desirable. It is believed by the author that this mixture will kill all classes of sucking insects, although it was only tried on the one variety which has already been mentioned. Nothing has been done to prove its effectiveness on the biting insects, but it is presumed that the addition of a small amount of Paris green would render it effective if not already so.

A Caution.

"These remedies will not kill sucking insects with which they do not come in contact; they must be properly made and the spraying must be thoroughly done. The careless fruit grower is hereby cautioned not to attempt the use of 'K-L' mixtures because he can not obtain satisfactory results."

A Request.

"The writer requests those interested in combating San Jose scale to test the 'K-L' mixtures as soon as convenient and report results so they may be included in a bulletin on this subject to be published during the winter."

While the hydrated lime used in this case was a dolomite lime it is probable that any thoroughly hydrated lime will be equally efficacious.

Standards Governing Shipments.

For the benefit of the manufacturer of lime, and that they may not forget the up-to-date action taken at the lime meeting in Detroit, they can well follow in the foot-steps of Mr. Charles Warner, whose company adopted the following standards for hydrated lime to take effect September 1:

BAGS—A heavy, closely woven burlap or duck bag, containing 100 pounds, 20 bags to the ton. A paper bag containing 40 pounds, fifty bags to the ton.

QUOTATIONS—All quotations are made including the cost of the package, no bulk quotations being made.

RETURNED SACKS—The burlap or duck bags will be repurchased from the customer at ten cents each, when returned to the mill in good condition, freight prepaid.

TERMS OF SETTLEMENT—A discount of 1 per cent. will be allowed for cash in ten days, the discount to be taken on the full price including the bags, f. o. b. manufacturer's plant or shipping point. Net cash 30 days."

The Sciota Lime and Stone Co., Delaware, Ohio, called our attention to an article on page 30 in the August issue in which the word "plaster" is used in its broader sense, but might be misleading. The machine introduced is for the manufacture of hydrated lime only and not for the mixing of hard wall plaster or dry mortar, which might possibly have been inferred from the way the statement was made. The hydrater is thirty feet long and is said to have a capacity of five to eight tons per day.

Correction in Mr. Cappon's Paper.

Thomas W. Cappon desires to have the following correction made in his abstract published on page 29 in the August issue. In the second paragraph, instead of reading "almost any soluble chloride," it should read, "which can be introduced by a cheap and suitable chloride." He calls attention to the fact that chloride, such as common salt, should not be used as it would introduce undesirable features. He further states that the reaction which takes place in his process is not the sorrel cement reaction, because the magnesium oxychloride could not be formed in the presence of a large excess of hydrated lime, therefore other reactions are necessary and these reactions are the ones which give value to his process.

Correcting Our Report of Mr. Eldred's and Mr. Brand's Discussions.

In making up a skeleton report of the discussion on gas producers at the lime meeting at Detroit, which is a very difficult feat of literary gymnastics at best, we attributed a statement to Mr. Brand which really was made by Mr. Eldred, and which, of course, is misleading. The statement as we printed it reads: "Mr. Brand stated that the output of lime per pound of coal was something like 3.2 pounds, and that Mr. Warner could state that he had gotten as high as five pounds of lime per pound of coal."

It should read: "Mr. Brand stated that the output of lime per pound of coal was something like 3.2 pounds, with a gas producer at his plant, while Mr. Eldred emphasized the fact that he obtains over five pounds of lime per pound of coal with his process. As for instance, witness the Warner plant at Cedar Hollow, where these results are daily obtained. Mr. Eldred stated that the Warner kilns are running at an efficiency of 87 per cent. Mr. Eldred also said that he would install and demonstrate his process in any lime plant of two or more kilns, without any charge whatsoever to the lime manufacturer; the equipment to be accepted by him only provided the success of the process be demonstrated to his satisfaction."

In connection with the discussion of Mr. Ellis on the same subject, he was made to say that the loss of 20 per cent. due to gasification and radiation would be eliminated if a modified coal fire or steam producer fire was used, such as Mr. Eldred had introduced, and would give a greater fuel efficiency than anything that had been so far presented.

What he did say was that they (parties using gas producers) lost at least 20 per cent. in gasification, but in combination with regenerators it does work satisfactorily in steel manufacture, and it is only under such conditions that it will work to advantage.

Mica Schist Described.

PHILADELPHIA, July 25.—J. W. Paxson Co., replying to an inquiry, say: "Mica Schist, is a natural fire brick. It is taken out of the quarries, and looks like building stone, irregular in shape and size. It is easy cut or broken, and a wall is built of this material around the inside of lime-kilns, cupolas, Bessemer converters. It is used in place of fire brick, and it will last about twice as long. There is no waste to this material, as the small pieces and crumbs are broken or mashed up, and mixed with a little clay and water to make a mortar with which to lay the wall. Under heat the wall will freeze, making it solid."

We quote at \$1.25 per ton of 2,000 pounds f. o. b. car our quarry near Philadelphia. We are supplying almost every Bessemer converter in this country and a large number of lime kilns, cupolas, etc. If you will tell us for what purpose you want to use this material, and give us shipping directions, we shall be pleased to quote freight rate accordingly.

We have just received a letter from the Clyde Iron Works, Duluth, Minn., which indicates that the boys are delivering the goods, just as they said they could do when they had the lime manufacturers down to Sugar Ridge. They write us "Prospects in our line are very flattering and from the marked success which all the plants we have already installed are having and from the great interest manifested by the many who are now taking the matter up with us we believe that we have struck the keynote in the matter of hydrating lime. We have closed up quite a number of additional contracts recently and there are quite a few more of them that we will close up in the next week or ten days. We cannot help but say that our advertising in Rock Products has been very productive."

ROCK PRODUCTS.

Cause for the Heating of Coal.

The hard coals give no trouble on this score, but the bituminous are all more or less susceptible to spontaneous combustion. The soft coals all have considerable amounts of sulphur and volatile matter, yet there are semi-bituminous coals which heat better and are low in sulphur. Considerable quantities of coal or fine dust should not be stored in large piles or in bins, which are so constructed that they do not readily permit the transmission of heat.

Moisture has a very dangerous effect on the chemical activity which seems to prompt oxidation and the development of heat, especially if pyrites be present. Fires usually start near the walls where there are small inlets of air. The introduction of small pipes for the purpose of ventilation does not seem to be a good practice. They usually do more harm than good. If the ventilation can not be sufficient to carry off all the heat developed, it is better not to ventilate at all. Tests have been made with a view of determining some safe grade, and coals which contain more than 5 per cent. of moisture, after being air dried, are said to be rather dangerous coals.

Wood should never be used in the construction of storage bins. Steel, iron or reinforced concrete is probably the best. The bins should not be subject to any external heat, such as the leading of steam pipes or smoke fules through or past the coal. Protection may be had by introducing ventilators in the wall or steel tubes, which are imbedded in the recesses of the pillars supporting the roof and observe the temperature from time to time. If the temperature reaches or goes beyond 140 degrees F. there is danger. Probably the most effectual way is, if the coal shows too much temperature, to shovel it over and expose every part to the air and allow it to cool.

Fuel Experiments

Mr. D. Baker in an article in *Iron Age* on the calcining of lime for use in the basic open hearth furnace, brings out a number of interesting facts.

When lime was burned with coal carrying 2.25 per cent. of sulphur the burned stone carried an average of 0.22 per cent. of sulphur and sulphur on the outside ran as high as 1.1 per cent. With fuel tar 0.25 per cent. sulphur as the means of burning, the percentage of sulphur in the burned lime was as low as 0.11 per cent., but the cost of tar was prohibitive.

Unpurified gas gave still higher sulphur in the lime. Gas which had been passed through scrubbers, and containing bog ore, which removed 95 per cent. of the sulphur was very satisfactory. It requires ten thousand cubic feet of gas per ton of lime, costing forty cents, while the cost of ore in the scrubbers is four cents and of labor sixteen cents, making a total cost of sixty cents per ton of lime beyond the first cost of stone.

The plant of the Caledonia Marl and Lime Co., of Caledonia, N. Y., is to be enlarged in the near future to such extent that its capacity will be doubled. Work has been started on a 30x175 feet drying shed. New drying pans, which are the product of a local inventor, are being installed. Storage capacity sufficient to run during the entire winter, will be provided. The company has discovered that the few inches of muck which covers their marl is really a peat and can be burned and it is probable that this material will be made use of in drying the marl. J. C. Tennent is president.

The Canton Lime Co., of New York, which was organized under the management of E. E. Stevens, has put up a continuous draw kiln and it is operating at what was formerly known as the E. E. Stevens Marble Quarry, which is also being worked by the Watertown Marble Co. for other than lime purposes. The kiln has been in operation about six weeks and there seems to be a good demand for this lime, which is of a quick slaking variety.

The office of the lime warerooms of the Leon Lime Co., San Luis and South Salado Streets, Austin, Texas, were destroyed by fire recently.

The Independent Lime Co., at Dale, Wis., which is composed of Leander Choate, E. H. Steiger, of Oshkosh, E. Kiesow and W. Golze, of Readfield, are now shipping about five carloads per week and will have a sidetrack in before winter sets in. Mr. Seigert, of Readfield, is superintendent.

Plaster.

The National Plaster Manufacturers' Association.

Meets Semi-Annually.

H. E. DINGLEY, Syracuse, N. Y.,	President
A. H. LAUMAN, Pittsburgh, Pa.,	First Vice President
L. G. POWELL, Toledo, Ohio,	Second Vice President
JAS. LEENHOUTS, Grand Rapids, Mich.,	Third Vice President
ALEXANDER FORRESTER, Cleveland, Ohio,	Treasurer
E. H. DEFEBAUGH, Louisville, Ky.,	Secretary

Official Organ, ROCK PRODUCTS.

Mortar Made of Sand and Lime.

In the preparation of mortar made from lime and sand for the purpose of laying brick or for plastering walls and ceilings, perhaps the most important feature of the work is the precisely correct slaking of the lime. While all such things are well known to the practical plasterer, there are a number of persons interested in the subject who have asked ROCK PRODUCTS for detailed information about the mixing of a good mortar, and we are glad to reply to same.

Place in your mortar bed or box the quantity of lime which you desire to slake in a pile in the center, and not scattered about, putting water into the lime gradually until it begins to take on heat, and increase the water as the heat increases, stirring the mixture with a hoe in such a manner that the water will reach all parts of the lime, and care should be taken that the lime does not get hot enough in slaking to burn, as this will kill the lime. After the lime is hot, it should be continually stirred and care be taken not to put in enough cold water to "drown" the lime before the process of slaking has well begun, for it will sometimes require two days or more to produce the same results which should be accomplished in one hour, if done the right way. Persons who are accustomed to slaking hot quick lime often make this mistake, and frequently the lime has been condemned as being no good for this reason.

Lime for plaster purposes, especially for hard white finish, should be slaked at least a week or ten days before it is needed. This gives a chance for all the fine particles to become thoroughly slaked before it goes into the wall.

The foregoing remarks apply to almost any ordinary white lime, and do not apply to the lime hydrate which is now so rapidly taking its place as building material. Hydrated lime can be used for every purpose for which quick lime is used, putty made from it being identical to that made from freshly burned lime. It is no longer in the experimental state, but thoroughly tested, and highly satisfactory. It contains no free lime and no free moisture, and can be kept indefinitely, thus removing it from the perishable list to a staple commodity, for it never expands or bursts the package. In process of manufacture it is perfectly screened and purified thereby, avoiding any danger of its pitting or popping.

When it is used in a plaster mortar, more sand can be added to the mixture, and less hair is necessary than formerly used with ordinary lime. Contractors and plasterers are giving it the preference on account of the decrease of labor, and because they do not have to take the chances of having the lime which goes into their mortar ineffectively slaked by reason of the inferior judgment of the labor they employ.

Plaster Mortar With Ordinary Lime.

Five bushels of lime which has been properly slaked, thirteen bushels of sand and one bushel of long hair, with sufficient water to bring the whole to the consistency of putty when well mixed will make a first-class mortar for the first coat.

For the second coat, three bushels of the slaked lime should be run through a sieve of one-quarter

inch mesh, and this should be well mixed with twelve bushels of clean, sharp sand.

The third or finishing coat should have lime that has been slaked ten or twelve days previously and put through a one-quarter inch mesh sieve, adding about a half-gallon of water and then mix calcined plaster with it until the water is absorbed. Mix all thoroughly with a trowel before applying to the wall or ceiling.

Eight bushels of good lime, sixteen bushels of sand and one bushel of hair will make enough good mortar to plaster 100 square yards.

Plaster Mortar Using Hydrated Lime.

Hydrated lime slakes instantly on coming in contact with water, consequently the putty can be made immediately before it is to be used, and this is the only difference, for the other materials may be added in like manner as before and obtaining the same results.

In making the mortar for stone work or brick work by the use of hydrated lime, it is possible to use it in the same manner as in the case of cement, which is by mixing the dry lime with the sand, when stir thoroughly with a hoe, and then add sufficient water, no box being required for such a mixing.

White Coating With Hydrated Lime.

A barrel of hydrated lime of about 200 pounds should cover 100 square yards of plastered wall or ceiling, depending upon the character of the second coat. It is mixed the same as with lime putty, using from half to two-thirds the usual quantity of calcined plaster to obtain the same results. It makes a harder, whiter finish and it will not pit on the wall.

About Ventilation.

In winter after a wall is plastered it should be given about six hours of moderate heat, and frost will not injure the work thereafter. Enough artificial heat only should be supplied to keep the frost out of the work, for a hot stove placed near a green wall will, in almost every case, cause lath cracks. Do not shut the building up tight in cold weather and use forced heat, as the windows must be opened enough to give ventilation. All the water used in the plaster must go somewhere, and unless it is conducted out of the doors and windows, it will go back into the woodwork and the lath and make all sorts of trouble.

Such rules of course, apply to plaster with any kind of material and is mentioned for the benefit of those who know it well enough, but just don't think.

A New Deposit in the Ohio Gypsum Field.

Near Castalia, Ohio, on the Lake Erie and Western and Big Four railroads, and one and one-half miles from Sandusky Bay, on the farm of Alfred Meggitt, there has been developed what is said to be a very fine deposit of gypsum. Locally, it is considered one of the best in the United States. Ohio gypsum is well known for its quality, having but one drawback, which is the presence of flint mixed with the gypsum rock. This new development shows a very white gypsum, which is comparatively free from flint, and almost entirely free from other impurities.

There are three veins, giving a total measurement of 15½ feet, with only thin veins of lime rock between six and twelve inches in thickness. There is a good roof over the gypsum and during the sinking of the present developments, a four-inch pump was sufficient to handle the water. This deposit lies in the South Shore district, and some time ago this South Shore district was brought to notice by the Winters Gypsum Co., who did quite a good deal of drilling and have made several openings, showing that there is a good thickness of gypsum on the South Shore, and also that which lies in a more or less isolated spot, the same as the North Shore deposits; that is, the gypsum is liable to pinch out almost or entirely so, at certain points in the region.

The parties doing the developing of the property have sunk a shaft 11x13 feet in dimensions to a depth of 73 feet, and are now about to begin the organization of a company to erect a mill of fire-proof construction with a capacity of 250 tons of calcined plaster in 24 hours run, and will install all the latest and most improved devices known to mine the rock and manufacture the gypsum into the several grades of plaster for walls, and all other purposes.

Cement.

The Cement Association Meeting in St. Louis.

The Members of the Association of Cement Manufacturers of the United States have all been notified to attend a meeting at the Palace of Mines and Metallurgy at St. Louis, September 13 and 14. The hotel headquarters, The Planters, are fine and every man who is in the business ought to be on hand and endeavor to become a working member of this association. It is all very well to question the good accomplished by organization, but the man that can not gain education and learn something by associating with his competitors is in a bad fix. The program of the meeting, of course, will be for the benefit of the members only, but the Western contingent should be out *en masse*, as well as the Eastern members, because St. Louis has a great Fair, and possibilities for the greater uses of cement will make it possible for a greater education at this meeting than at any that has heretofore been held.

The Cement Conditions.

A well posted Eastern correspondent says: The cement business is in a peculiar condition, that is to say, the shipments are fairly good, but the prices are at the lowest level ever known. Sales are reported at 65 cts. f. o. b. mill, and it is hinted that even lower prices have been quoted to the cash buyers.

None of the mills, with the possible exception of the Bonneville, are being run on full time.

The Martins Creek Portland Cement Co. has closed down to install new engines. The Edison Portland Cement Co. has closed its works down entirely on account of troubles with its separators.

The National Portland Cement Co. is not doing anything towards the completion of its mill, as it does not deem it good business to put a new cement on the market at present prices. The Quaker Portland Cement Co. is also idle for substantially the same reasons. The mills in the Lehigh district are running about half time, and there is a general feeling among manufacturers that if business does not improve, it will be good policy to shut down entirely. This will of course throw several thousand men out of employment.

As an offset to the low price of cement, gas slack coal is being quoted at extremely low prices, 30 cents to the ton as against 75 cents in the spring. This of course makes a difference in the cost of manufacturing cement, though not as great as it would appear on account of the high freight rates from the gas coal district to this territory.

The Bath Portland Cement Co. is proceeding with its construction.

The Dexter Portland Cement Co. has recently installed a No. 7½ crusher to handle its quarried rock. This crusher is run by a 100 h. p. electric motor, and the contents of the car from the quarry are dumped directly into the mouth of the crusher, only one man being necessary to trim and handle it. The crushed rock goes into two spouts, one feeding directly to a belt running to the dryer, and the other taking the surplus stone in the elevator and accumulating it in the stock-house built above the tunnel, in which this belt runs. This improvement has enabled the Dexter to dispense with about twelve men.

Resume of the Cement Situation.

A meeting of the American Association of Portland Cement Manufacturers, to be held in St. Louis on September 14, will be purely of an informal character. No set program for papers or technical discussions will be arranged. The members expect to put in all their time at the Fair, with the exception possibly of a brief session or two devoted exclusively to the commercial side of the business.

The statements of exports of Portland, Roman and other hydraulic cements show a continued de-

Imports of Portland, Roman and Other Hydraulic Cements.

MONTH OF JUNE, 1903			12 MONTHS ENDING JUNE, 1903	
COUNTRY	BBLS. 380	VALUE	BBLS. 380	VALUE
United Kingdom.....	14,992	\$19,262 00	122,448	\$ 152,963 00
Belgium.....	84,337	98,175 00	914,079	1,024,601 00
France.....	3,133	5,118 00	17,006	26,918 00
Germany.....	160,430	196,936 00	1,824,211	2,287,612 00
Other Europe.....	10,115	10,722 00	35,626	39,032 00
British N. America.....	1,030	2,000 00	5,251	10,761 00
Other Countries.....	52	440 00	3,806	6,027 00
Totals.....	274,089	\$332,653 00	2,922,427	\$3,547,914 00

EXPORTS.

June, 1903.....	25,295 barrels, value \$ 37,749 00
Twelve months ending June, 1903.....	271,272 barrels, value 419,361 0

Imports of Portland, Roman and Other Hydraulic Cements.

MONTH OF JUNE, 1904			12 MONTHS ENDING JUNE, 1904	
COUNTRY	BBLS. 380	VALUE	BBLS. 380	VALUE
United Kingdom.....	177	\$ 270 00	116,440	\$ 141,148 00
Belgium.....	25,342	26,735 00	492,252	559,318 00
France.....	2,946	4,804 00	31,740	42,626 00
Germany.....	16,727	20,841 00	937,816	1,213,905 00
Other Europe.....	14,005	14,951 00
British N. America.....	92	185 00	2,546	4,553 00
Other Countries.....	1,579	2,316 00	11,232	17,162 00
Totals.....	46,863	\$ 55,151 00	1,606,031	\$1,993,303 00

EXPORTS.

June, 1904.....	57,802 barrels, value \$ 85,576 00
Twelve months ending June, 1904.....	362,503 barrels, value 530,216 00

IMPORTS—Decrease for month, 1904, on 1903, 227,226, \$277,502.

IMPORTS—Decrease for twelve months, 1904, on 1903, 1,316,396, \$1,554,611.

EXPORTS—Increase for month, 1904, on 1903, 32,507, \$47,817.

EXPORTS—Increase for twelve months, 1904, on 1903, 91,231, \$110, 855.

crease in imports, and for the first time exports exceed imports. A comparison of these figures gives a striking demonstration of the change that has taken place in the trade within the last year. For June, 1903, imports were 274,089 barrels, while the exports were only 25,295 barrels. For June, 1904, imports have declined to 46,863 barrels and exports increased 57,802 barrels, showing an excess of exports over imports of about 11,000 against an excess of imports of 250,000 barrels a year ago. These figures show that the importation of cement into this country has practically ceased, while there is a constantly growing foreign demand for the American product. While exports for the year ending June 30 were only 352,503 barrels, the present rate of export is nearly 700,000 barrels per year, and there is every reason to believe that within the next year more than one million barrels of American cement will find its way to foreign markets.

Cement Manufacturers in Cuba.

HAVANA, CUBA, August 24.—The cement industry is booming in Cuba, and the builders and manufacturers are getting more and more orders for houses built of this material, where formerly they would be constructed of a sort of composition of the native clays, called "mamposteria," which crumbles away in a few year's time.

Rock Products' correspondent visited a few days ago the large plant of the Almandaras Cement Factory, which is situated on the outskirts of the city and is reached by the suburban tramways of the Mariano and Vedado system. In conversation with the manager, Mr. Diguet, the following information was obtained. This factory covers some sixty acres and they also have some concessions to get out clay, lime and stone rocks on large tracts of land in the immediate vicinity of the plant, and which are conveyed to the latter by aerial tramways, and also the waterways to which they are in close proximity, giving them very accessible means of transportation by sea as the schooners can come along side their docks and

load for the different parts of the island. They manufacture about 100,000,000 barrels annually and employ some 1,500 laborers, the plant being kept running day and night. There is an inexhaustible supply of material, said Mr. Diguet. "In fact we have enough to last for one hundred years." They put the cement up in barrels holding 400 pounds. These they sell at about \$2.50 to \$2.52, and they also put it up in smaller size barrels, and also in sacks holding one-third of a barrel. They have about 500 tons of cement always on deposit and have seven of these deposits in different parts, besides about 3,000 barrels always ready for immediate shipment.

This concern has a good portion of the work of the city, as their factory is under the direct supervision of the government who, at stated periods inspect their bags and sacks and attest to the same that they hold a guaranteed amount of cement.

The extensive works that were commenced during the intervention by General Wood, all along the famous Malecon driveway and park, in which the city has consumed some 25,000 barrels alone, was supplied by this firm and they are now supplying all the cement used in the new roadway which is being put down on St. Raphael Street, as well as that which was just finished on Obispo Street, which is the principal shopping street of the city.

This company has just introduced the new patent rotary kilns which have been used with such success in the States, and the managers say they have more than paid for themselves in the first trial and they were fully satisfied with them as to the results to be obtained by their introduction.

The concern in question also manufacture a large line of fancy tiling and mosaic work which is used so much here in the construction of houses, and have skilled workmen who are constantly getting out new and elaborate designs in this work. They also manufacture tiles for roofs and all the fancy and ornamental work which is used for borders and decorations which may be made of cement, including ornamental flower pots, jardi-

ROCK PRODUCTS.

nieres, etc. The machinery they use is chiefly of European make with the exception of the kilns, which are of the American patents. But the electric motors, of which they have a number in use, are mostly of French make, while their engines are manufactured in Germany, the boilers being of English make.

Your correspondent noted one electric motor used in the tile and mosaic department, which is made by the Cutler Hammer Manufacturing Co., Milwaukee, Wis.

They get in their barrels in the flats in shooks about twice a month, and order usually about 10,000 at a time, which are made up at the factory where they have separate shops for all the work necessary for so extensive a plant.

Larger importers here from the States of cement are Messrs. C. B. Stevens & Co., of Lamparillo, 11½ Havana. Their manager, Mr. Legreta, consented to give a few particulars of the business they do which is the largest of any in the city. In fact they do seven-eighths of the cement business which is imported into the island. They represent the well known brand of Portland, Lehigh, cement and bring in about 2,500 barrels in a month, as well as 500 to 800 barrels of plaster during the time. They have the contract to supply the city with chemicals, and have a yearly contract for all the sulphuric acid, chloride of lime and petroleum needed for Havana.

This firm has supplied so far one contract for 17,000 kilos of cement for the government, which they obtained on a bid. Their cement they sell for \$3.00 a barrel being a little superior quality to the local manufactory. They have also made some shipments to the lands of the Cuba Land and Leaf Tobacco Co., who used 50 barrels last week at their place, Las Palomas, and also 50 barrels at another place called LaFex. This concern has contracts with some of the largest companies here to supply them with their cement, notably the Havana Electric Railroad Co., the United States Railways, Messrs. Purdy & Henderson, large contractors and some of the large hardware stores of the city. Purdy & Henderson use for their contracts about 300 barrels a month.

The cement costs about 58 cents duty per barrel and this was not charged at all by the reciprocity treaty.

Their brand of plaster is called the King with the diamond trade mark, and for this they can not supply the demand, and their last importation of 100 barrels was gone as soon as it was unloaded on the wharf. They do a large business through the island, and last week sent out some 300 barrels to the Arnoldson Co. for the construction of a wall and wharf for a railroad company in Cardenas, as well as shipping to the Cuban Central railway 300 barrels for work of the company at Saguanas. Other brands of cement which are imported into the island are "Dragon" by Del Rio & Bros., "Alpha," imported by Clow & Sons.

Every trip of the New York steamers brings in from 800 to 1,000 barrels for the Stevens Co., and which are sold from the wharves, so active is the demand for cement, and no storage is required.

Mr. C. D. Stevens, the head of the concern, is now away in the United States getting a further supply of cement and seeing to the more prompt shipment of further orders to insure them getting here in good time to meet the great demand for the fall and winter trade. There is a wonderful supply on the island of a natural cement and there is on the line of the Cuban Central a station built entirely of this material, and which is very lasting and finished in appearance. Cuba has all the natural products for producing good cement, both in its clay, lime and rock.

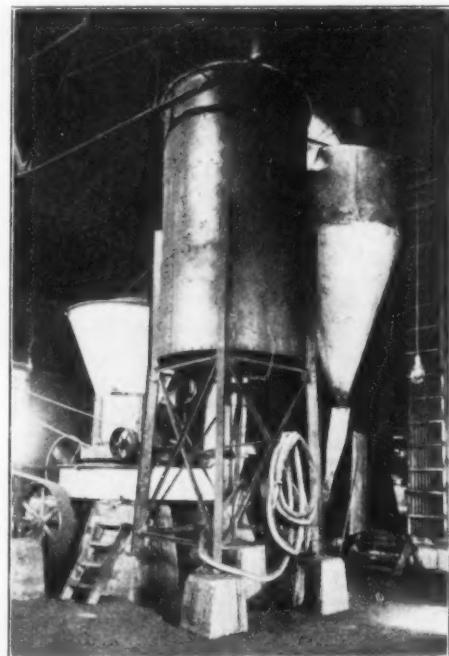
The plant of the Peninsular Portland Cement Co., at Cement City, Mich., was damaged by fire to the extent of \$15,000.00 to \$20,000.00 recently.

The Zenith Portland Cement Co., whose assets have been recently sold under mortgage foreclosure for \$6,000.00, is a serious blow to the cement industry and will entirely wipe out the smaller stockholders. Failure to make the company a go is attributed to the introduction of the dry process of cement manufacture, as the company expended some \$33,000.00 in land which is practically under water and useless for any other purpose than to take marl for the manufacture of cement and this becomes useless by the dry process. So the project has been abandoned with the foundations for the factory practically completed. Several hundred thousand dollars have been lost in the wreck.

It is rumored that the Mohawk Portland Cement Co., Syracuse, N. Y., will absorb the Warner Portland Cement Co., with its plants at Warner, N. Y.

The Reading Cement Co., South Evansville, Pa., are still turning out large quantities of Portland cement daily. Last week they sent out fifteen carloads of cement.

Mr. H. H. Jones, of LaHarpe, Kan., states that he has leased a tract of land to parties from Cleveland, Ohio, who are organizing a company for the purpose of erecting a Portland cement mill



Raymond Bros. Co.'s Pulverizer at Buckeye Portland Cement Co., Bellefontaine, Ohio.

at a cost of \$1,000,000.00. The plant is to be located about three miles North of Gas City, near Iola, Kan.

The Phoenix Portland Cement Works, Nazareth, Pa., has recently gone into the control of a new management headed by William Turner, president of the First National Bank, of Pen Argyl, and George W. Lobb, director of the National Bank, and Gustav Rumpp, who is largely interested in the cement industry.

The State Canal Board of New York, sitting at Albany, N. Y., have received a petition signed by the Portland cement companies, requesting that provision be made whereby cement manufactured in the State be given preference in use in the construction of the barge canal. Mr. Charles H. Ramsey, assistant general manager of the Helldenberg Cement Co., explained the position of the manufacturers and urged that the request be granted.

The Buckeye Portland Cement Co.

BELLEFONTAINE, OHIO, August 29.—Since 1888 The Buckeye Portland Cement Co., with offices in Bellefontaine, Ohio, and plant at Harper, Ohio, have been well known to the users of cement in Ohio and adjacent territory. The prime movers in the establishment of this plant were George H. Kaltay, who has been dead some years, and G. W. Bartholemew, who is still in the cement business in the West.

The raw materials available here are marl and clay. This company to-day owns a very large amount of marl, all in easy reach of the plant. Only a small portion of the marl property owned has been opened up.

The plant was originally designed to operate with Dietsch kilns, mixing wet and molding into briquettes and drying prior to introduction into the kilns.

In 1892 four dome kilns were added and some time later, about '98, one rotary. The dome kilns have been abandoned and are used for storage, and the plant is to-day equipped entirely with rotaries.

This plant has undergone more changes than any plant in Ohio and probably more than any in the United States. At one time almost every type of machinery, from ancient to modern, could have been seen on the grounds, but to-day it is a modern plant, so far as machinery is concerned. Of course the arrangement of this machinery is not exactly what it would have been if the plant had been built new from the ground up.

The first rotary was run about one year on oil when the price became too high and a gas producer was hooked onto the kiln and used up to 1902, when a pulverized coal system was introduced, using tube mill for grinding coal, which has been recently abandoned. This has been replaced by the system of The Raymond Bros. Impact Pulverizer Co., of Chicago, Ill. This consists of a pulverizer connected with an air separator, and Manager C. F. O'Donnell has the following to say about it: "Our plant is running in fine shape now and the new coal mill, a view of which we are sending you, is doing great work for us and is increasing our output and decreasing the cost of production to a considerable extent."

Several years ago the controlling interests changed hands and Chas. F. O'Donnell took the active management of affairs, and since that time the plant has been remodeled, so far as machinery is concerned practically dismantled, and reconstructed, and as a result the plant is essentially modern. Some of the more recent additions have been the installation of new tanks, a stone separator and a Raymond coal crushing system. The plant has been in commission during most of the changes. Three 70 ft. rotaries are in use, three tube mills and seven Buhr mills do the grinding.

The complete modernization of the plant and the prosperous business developed is a triumph of keen business and executive ability over so-called practical experience, and Manager O'Donnell should feel proud of what he has accomplished.

The future will prove that the new stockholders of this Buckeye Portland Cement Co., were wise in procuring his services and in taking his advice on most matters.



BUCKEYE PORTLAND CEMENT CO., BELLEFONTAINE, OHIO.

Exporting Cement.

While discussing the unfortunate conditions of the cement trade with one of the most practical members of the sales departments, he remarked that he was making tracks to get all the information he could together, with the idea in mind that the surplus production of cement could be worked off in the foreign countries, South America, Africa, Australia, and we are able to compete with the product of the cement manufacturers in England, Germany, Holland and Belgium. The one necessary adjunct to the manufacturer now is to get information as to representatives in these countries and make arrangements for bank facilities and shipping facilities.

The cement industry of the United States, like every other one, is open to great increase, notwithstanding the success which Portland cement is having, because we can produce cement, especially in the East and near the coast, so cheaply that we are able to compete in other countries and make a profit. It is like getting money from home. I would not be surprised if the Eastern manufacturer could ship cement by water to San Francisco and then compete with the California manufacturer.

The building of the Nicaraguan canal will increase the demand, and this, with a trade in foreign countries, certainly holds much promise for the manufacturer. However, under present conditions it seems necessary for the life of some of the manufacturers to sell two-thirds capacity at what seems to be a good deal less than cost.

There is no time like the present for manufacturers to increase their export business. This problem, if taken up by the association of the cement manufacturers, would be sure to encourage the gathering of information on the subject, which would be very valuable. It is a question where every man should be interested because he is a cement operator; and it is well for him to remember that what helps an industry in one section of the country is bound to react favorably in another.

Cement as a Fire Proofing Material.

Dr. Goslich, at a recent meeting of the German Portland Cement Manufacturers' Association, stated that iron spirit tanks painted on the inside with Portland cement are universally employed in European distilleries. The adhesion is increased by allowing the metal to become rusty before applying the cement paint, and perfect protection from further rusting is secured. Cement plastering is also largely used in England to protect the inner surface of steel salt-pans and sulphite digesters from the corrosive action of the hot solutions with which they are filled. In the same way that Portland cement, from its alkaline nature, neutralizes and fixes carbonic acid so it protects iron from the attacks of other dilute acids, such as sulphurous and sulphuric acid contained in the products of combustion of coal. The fear has sometimes been expressed that cinder concrete would prove injurious to iron on account of the sulphur contained in the cinders. The amount of this sulphur is however extremely small. Not finding any definite figures on this point, I determined the sulphur contained in an average sample of cinder from Pittsburg coal. The coal in its raw state contains rather a high percentage of sulphur, about 1.5 per cent. The cinders proved to contain only 0.61 per cent. of sulphur. The amount is quite insignificant and even if all oxidized to sulphuric acid it would at once be taken up and neutralized in concrete by the cement present and could by no possibility attack the iron.

These considerations and examples show clearly that no anxiety need be felt in regard to the durability of steel embedded in concrete, even when exposed to the most trying conditions that can occur in practice.—*Stone Trades Journal*.

Washing of Portland Cement.

Work done by H. Sagger and E. Kramer, published in *Thonind-Zeit*, indicate that the method of washing cement to eliminate soluble salts does not seem to afford any advantage. The experiments show that both clay and kaolin considerably increase the tensile strength of Portland cement mixtures without any very material loss.

These results seem to confirm those of Sherman published in the *Iron Age*.

The Chanute Cement Co., Chanute, Kan. continues to purchase land surrounding the site of its proposed plant eight miles west of the town.

Artificial Stone

Co-Operative Association Wanted.

Mr. A. S. J. Gammon, of Norfolk, Va., well known in the builders supply business in his section, clearly voices a suggestion which has come to Rock Products from very many of our readers with regard to organizing an association of hollow concrete block manufacturers in the following brief letter: "Your paper appears to be the organ for so many of the builders' supply materials that I write to ask that you advocate the formation of an association of artificial stone manufacturers. 'In union there is strength.' The cement manufacturers could no doubt furnish such an association with valuable help in the way of literature, tests, etc., which they could not do otherwise, and in this way artificial stone as a business could be very much improved and some recognized standard can be maintained."

This is one of a number of such communications which are continually coming to us for publication, and we invite all the firms in the country who are interested in the manufacture of cement building blocks, sand-lime brick, and in short, all the manufacturers of artificial stone of every description to communicate with Rock Products upon this point. It does look as if the artificial stone industry is in need of some kind of concentration which will bring out the best efforts and the best methods to a higher degree of perfection, so that standards can be established which will increase the efficiency and usefulness of the materials under consideration.

Throughout the country there are a large number of manufacturers of artificial stone who are to a greater or less degree sparring in the dark, and conducting their business in an experimental way. They are not getting the profits out of the business they should, nor advancing into the position of universal recognition in the markets which they very well deserve and can certainly obtain through associated effort.

Mr. Gammon is very enthusiastic in this matter, and there are great many others who merely need the suggestion to see the opportunities and benefits which can be attained. Write a line to Rock Products promptly stating where you stand on this important question.

How to Make a Cement Sidewalk.

Answering quite a number of inquiries that have come to Rock Products as to the best method of making concrete sidewalks, we have held quite a number of interviews with different practical experts in this line, and putting the testimony derived in that way side by side, there seems to be on the face of the returns, a very wide diversity of opinion, and every one of them declares that he gets the "very best results." On the other hand, when all the testimony is carefully sifted, the principle in all is practically the same; and while we do not feel at liberty to say what might be exactly the "best" cement sidewalk, we can say without the chance of being contradicted, that the following instructions, if carefully followed, will produce a very excellent cement sidewalk.

The foundation should be prepared by excavating to the depth of twelve to fifteen inches below the proposed finished surface, and should be well rammed and leveled where the sidewalk is to be laid in new ground. In cases where a sidewalk has existed for a long time, the foundation will probably be found sufficient, and such alterations as are made will have to depend upon the judgment and experience of the party who proposes to lay the sidewalk.

But, returning to our foundation, after it is rammed and leveled it should be filled with clean cinders, coarse gravel or broken stone, and again leveled so as to leave at least four inches for concrete finish. This filler or base for a sidewalk, should be thoroughly wet and well rammed again so as to insure a perfect setting. The concrete should consist of the following ingredients:

1 part Portland cement.
2 parts of clean, fresh sand.

4 parts of coarse gravel or crushed stone.

The cement and sand should be mixed thoroughly in the dry state and wet to a stiff putty before adding the gravel or crushed stone, then wet the whole, and mix thoroughly with a hoe, then apply and ram into a layer three inches thick.

The top dressing should consist of one part of Portland cement and one of clean, sharp, dry sand. These should also be thoroughly mixed before adding the water, and only sufficient water should be put in to make the mixture plastic. The top dressing should be applied and carefully troweled. Great care should be exercised in getting exactly the right amount of water into the different mixtures, and this is a point where the experience of practical operators contend, and where opinions differ, but we are inclined to think that climatic conditions have something to do with this. For instance, concrete mixed in Memphis or New Orleans will take a little more water than when mixed in Chicago, Cleveland or Buffalo. This should be borne in mind, that cement may be "drowned" by excessive use of water. In other words, the particles of the cement which combine to make the crystals or bond may be so washed about by the water and scattered that its intrinsic value may be destroyed.

Some of the practical men say: "The less water used, the better the concrete that will be produced." Another uses this expression: "You must be sure to get enough water into the mixture to provide all the cement with its necessary supply, for the cement can't set without sufficient water, and you do not want cement in your concrete that is not set."

Another point on which all seem to be agreed is, that cement work in hot weather should not be allowed to dry too quickly. It should be sprinkled with water judiciously and protected from the summer sun and rain until it sets thoroughly.

In troweling the top dressing, one of the features of good sidewalk making is that it should be worked until water flushes to the surface, and the sidewalk should be laid in sections of convenient sizes to handle with one mixing of the concrete, for no concrete should be used that has already set in the mixing box, and better results are obtained by keeping the surface wet for three or four days after same is set.

The Technical Link Needed.

The many inventions of machinery for the purpose of manufacturing building blocks of cement concrete, and the high degree of perfection which has been attained, places this class of artificial stone in the front rank of building materials beyond a question, and it is surprising that the business has not grown to enormous proportions in the large cities, and indeed in all the smaller communities, for it requires no large investment of capital, and certainly should, if properly managed, make a lucrative and steady business for the ambitious and enterprising operator.

In many localities the new material is barely recognized, and there seems to be a tendency on the part of architects and prospective builders to see somebody try the new material before they are willing to make the plunge, suggesting that "We know just what can be done with other materials already well known, and supplied in sufficient quantities to meet all demands." There seems to be really no place for anything new in this particular line.

Yet, the concrete building block people are putting up some very excellent work, exquisite in design, and perfectly finished and it is reported that some of this very fine work is much cheaper than ordinary faced brick construction or even frame building. Indeed, when the outrageous conduct and exorbitant prices demanded by the labor employed on the older systems of construction are taken into consideration, it really looks like there is a field and an opportunity which the new material is certain to fill in the very near future.

The machine man has done his part well, the concrete workers are turning out an excellent product by nearly all the systems, and others are rapidly perfecting their arrangements, so that there is no discount on the material and the only thing lacking is the technical link.

The country is full of ambitious young architects and engineers who find the pathway of success rather crowded in the older lines of construction, and it seems to a careful observer that there is no such opportunity presented to-day which will re-

ROCK PRODUCTS.

ward genius combined with technical education as the adoption of hollow concrete building construction. The architect who becomes the apostle of this new method of construction and originates catchy and up-to-date designs in this material, which is so extremely flexible, will certainly find his efforts crowned with a great big success, quickly following a little preliminary sparring necessary to make an opening. There is no community in which a handsome residence at a comparative low cost would not attract a great deal of attention and bring hosts of clients to its designer.

Recognizing as we do the high commercial value of the new material, Rock Products will be very glad to do everything in its power to encourage and assist parties possessing the necessary technical education to bring their operations successfully before the public, and such drawings as come to us at any time containing merit and originality will be published in this department of the paper, and we will endeavor to find any information which such parties may require at the beginning of the undertaking.

We would suggest that the plans for a four or five room cottage with a cement tile or slate roof, with modern conveniences, accompanied by *bona fide* specifications would not only attract a great deal of attention, but would be certain to find parties ready to build, as the saving banks of the country are full of money already accumulated for this very purpose.

In short, the success of one of the greatest industries which has sprung up in recent years depends merely on the attracting of enough technical knowledge to put it into actual practice, and Rock Products is certainly in a position to give the necessary publicity to insure the success of those enterprising architects who become the first leaders in this special line.

Interesting Tests of Concrete.

An elaborate series of investigations into the tensile strength of concrete, or Portland cement, is being conducted by the Massachusetts Institute of Technology, Boston, Mass. Such studies can be carried on more successfully in the summer time when there are hardly any students about to tread even lightly upon the floors of the building in which the work is conducted. Observations have to be recorded around the hour of midnight for the most parts so that the jar from the passing trains, trolley cars and other vehicles may be reduced to a minimum. This is a vacation undertaking which an instructor and a few advanced students have taken up.

The work of testing the elasticity of huge beams of concrete will be the first that as yet has been projected on any large scale anywhere, although some investigations have already been made on little blocks of cement by an English investigator. Whether what is true of small masses of the material is also true of the great sticks and bars of it used in commerce remains to be discovered.

With the growing use of this material in modern building specifications in the shape of beams and girders of concrete that are being employed more and more each year, it has become a great commercial desideratum to understand the laws governing the behavior of the material when subjected to stress and strain. Most of the beams now in commercial use contain bars of iron or steel of various shapes. Sometimes they are straight, sometimes bent into spirals, most often "splayed" at the ends. The reason for this splaying, or division of the reinforcing bar into a number of outgoing filaments is that when a beam breaks it usually cracks near one end. The special object of reinforcement is to strengthen it about the points where fracture is likely to occur.

The use of iron rods embedded in the concrete has been very largely a matter of rough-and-ready calculation and even of guess work rather than a scientific determination of all the elements contributing to make up the strength of a bar of the material. One of the most vital in calculation, however, that of the tensile modulus of elasticity, is still to be accurately determined. To use the scientific term the modulus of elasticity is the load per square inch divided by the compression, or the tension per inch of length, or the stress over the strain.

The importance of such an investigation can be fully understood only by engineers and by those familiar with the extent to which concrete is now used, and the still greater extent to which it is likely to be used in all building operations of the future.

Considering the immensity of such an industrial operation, it becomes apparent that the sooner all the properties of the various grades of concrete which are put on the market are understood by the engineers, the safer the ordinary man may feel in his daily life. When concrete was used mainly for flagstones, questions regarding its breaking strength were of no great moment, but when you find a twenty-story skyscraper built almost entirely of concrete beams, then the necessity for accurate knowledge becomes evident. Of course various chemical tests and rough-and-ready mechanical tests are made by the manufacturers at all stages of the process. What makes the concrete of so great value is the quality it has of growing continually harder and stronger while it is in use.

The results of the investigation at the Massachusetts Institute of Technology will be watched with great interest, and it will be our pleasure at the first opportunity to give our readers the benefit of this scientific research in the best obtainable form.

The Manufacture of Concrete Flagging.

In foreign countries, especially England, this problem is receiving much attention, and while these were manufactured mainly by hand before, a number of firms have built a press, which it is claimed make much better concrete flagging than it was possible to make by hand.

One of the firms manufacturing this sort of press is Messrs. Fielding & Platt, Gloucester, and one of



Coal Dust Collector at Peerless Portland Cement Co., Union City, Mich., showing chimney built entirely of concrete block.

these has been installed at the Atlas Stone Co.'s plant at Cambridge. These machines make thirty flags per hour.

Another press of this type is manufactured by the Queens Engineering Works, of Leeds. We have not heard of any such in the United States, but if there are we would like to know about them because we know if the American machinist goes after this problem, it will not be long until he will be on top.

Reinforced Concrete.

Charles H. Marquess in the *Engineering News*, says that the tendency seems to be that re-inforced concrete, unless made by some special system is no force; but he very forcibly points out that such is not the case, as follows:

"A column 16 in. square, of 1:2:4 stone concrete, corner angles 2x2x1/4 in., and corner angles 3x3x1/2 in. will carry a load of 117 tons up to 16 ft. The cost of this perfectly fireproofed column will be about \$2.00 per foot. The cost of steel column of the same capacity will be about \$2.28 per foot, without fireproofing."

To the knowledge of the writer no feature of this column is covered by a patent. If so, he would like to hear of it."

Mr. O. L. Danforth, of Mansfield, Ohio, has moved to Auburn, N. Y., where he will engage in the manufacture of the Parry Artificial stone burial vaults. He expects to establish shops in several of the large cities in New York State.

Concrete Building Being Introduced.

SPRINGFIELD, Mo., August 15.—The Moore Manufacturing Co. write: "We are in the midst of our annual improvement, and information on the matter of concrete will be acceptable, as we are putting the basement of our factory in condition to use, and wish to pave same with concrete. This requires 4,000 square feet of paving. We will also build a wareroom, and are thinking of concrete for the foundation and walls. John H. Redman, of this city, has built a concrete house of cinders, sand and cement, and it is said to be the cheapest ever erected in this city. The work on the walls all the way round cost only about \$1.00 a perpendicular foot. There is also under way a concrete foundation for a large storage wareroom, and the new railroad shops now building used this material for its foundations. This is essentially a wooden city, lumber being a cheap material as compared with either stone or brick, concrete taking the place of stone to some extent."

Makes Cloth Out of Stone.

ORANGE, N. J., August 4.—It is claimed by a resident of this place that he has invented a perfect process to convert asbestos rock into a beautifully silky fiber capable of being spun into a cloth similar to silk. He alleges the process is adapted especially to the manufacture of fine dress goods. Besides being mothproof, it is said, the new material is fireproof.

Mr. A. C. Barnhardt will erect a plant for the manufacture of artificial stone for Enid, O. T.

The Essex Cement Block Co., Shenandoah, Iowa, has been incorporated by: J. A. Johnson, Gust Newquist, A. D. Collins and W. E. Keister.

The Inman-Colvin Manufacturing Co., of Toledo, Ohio, has been incorporated with a capital stock of \$25,000.00. This company is already manufacturing concrete blocks for plain and ornamental construction.

The Topeka Hydraulic Stone Co., Topeka, Kan., has secured an amendment to the building ordinance of that city, which will permit the use of artificial stone, there having been no preference for such material until recently.

The Georgia Hydraulic Stone Co. has been incorporated at Dublin, Ga., by: H. C. Quinn, of DeKalb County, George W. Crafts, of Fulton, and W. T. Smith of Laurens. The company will manufacture tiling and building material.

The Newsom Crushed Stone and Quarry Co., 216 Court Square, Nashville, Tenn., expect to enter the concrete stone manufacturing business. They are now investigating the different makes of machinery for that purpose.

John Smithy, the enterprising proprietor of the artificial stone works at Marseilles, Ill., has offered to donate the concrete building stone necessary to build a new flag shanty for the Rock Island Railroad Co., at Main Street crossing on the road in that city.

The Chambersburg Stone and Cement Co., Chambersburg, Pa., has been organized by: William Stover, Ex-County Commissioner George L. Grove and Contractor Frank Hafer. They will manufacture artificial building stone and engage extensively in all kinds of cement work.

O. U. Miracle, president of the Miracle Pressed Stone Co., of Minneapolis, Minn., has made an extended tour inspecting his Eastern branches, and reports that they are all doing a very nice business. While in New York he closed a deal with the Brooklyn Queen's Cement Stone Co., for a complete power equipment, and at New Castle, Pa., he contracted to install two hand-tamping outfits, making in all a very satisfactory trip, and proving to him the vast possibilities of the concrete block industry.

Plans for an elaborate concrete viaduct to span the Menominee valley at the west end of Grand Avenue, Milwaukee, Wis., have been presented to the County Board. The communication from Architect H. C. Koch was favorably received. He suggested the employing of concrete construction in the erection of the proposed Grand Avenue viaduct, claiming that the concrete construction will cost very little more than an iron and steel bridge, while it will last hundreds of years and demand less repair. He estimated that the cost of the viaduct will be between \$100,000.00 and \$200,000.00.

H. I. Standley, from Hope, N. D., has recently started a sidewalk tile plant at Casselton, N. D.

Mr. C. A. Sessions, of Palmyra, N. Y., has commenced the manufacture of cement building blocks.

Jim Boring and associates at Fort Scott, Kan., will erect a factory for the purpose of manufacturing artificial stone.

The Newburgh Brick Co., Newburgh, N. Y., have undertaken the manufacture of sand-lime brick upon an extensive scale.

The Perry Concrete Stone Co., Perry, Iowa, has been incorporated with a capital stock of \$25,000.00 by: D. D. McColl, president, and H. C. Modlin, secretary.

The Artificial Marble Co., New York City, has been incorporated with a capital stock of \$15,000.00 by: John R. Towle, Carl O. Lindgren and Edward D. Paulin, New York.

The United States Cement Brick Co. will erect a factory 125x52 feet at Flint, Mich. The concern has bought 27 acres of land and will start with orders already booked.

The Cement Lime Brick Co., Schenectady, N. Y., have located their plant in the northern part of the city, and a structure 50x150 feet will be built of the product of the company.

The Nevada Artificial Stone Co., Nevada, Iowa, has been organized for the purpose of manufacturing cement building blocks. The work of turning out blocks will begin as soon as possible.

The San Jose Cement Block Co., San Jose, Cal., has been incorporated for \$25,000.00 by A. H. Michner, J. H. Kircker, W. H. Rogers, J. M. Graham, F. H. Bloomingdale and A. J. Crapo.

The Landon Cement Product Co., Tiffin, Ohio, has been incorporated with a capital stock of \$100,000.00, by W. S. Wagner, Charles A. Landon, George A. West, Frank A. West and P. E. Lee.

The Superior Cement Stone Co., Superior, Neb., have started the machinery in their plant and the first stone they make will be used by themselves in erecting a permanent building in their plant.

The Detroit Cement Machine Co., Detroit, Mich., are operating with patented machinery which somewhat resembles that which has been used for years in various countries, especially in Germany and France.

The Stevens Patented Cast Stone Co., at St. Louis, Mo., has been capitalized at \$5,000.00, half of the stock paid up by: S. M. Major, John Donnelly, Landry Harwood, Richard Stockton, James A. Gresham and others.

The Western Brick Co., Keokuk, Iowa, of which Mr. R. H. Bowen is general manager, has a solution used in the manufacture of cement building blocks which is said to add largely to their value as a finished product.

Mr. Charles G. Morris, of Anniston, Ala., is interested in organizing a company for the manufacture of sand-lime brick. He is now corresponding with various firms who build the necessary machinery for this work.

The Licking Art Stone and Construction Co., Newark, Ohio, has been capitalized at \$10,000.00, by a number of representative business men of the city. A large plant will soon be erected, as soon as arrangements are completed.

The Colorado Brick and Artificial Stone Co., Colorado Springs, Col., are erecting a plant which will manufacture 20,000 brick daily. Clark Mellen, R. J. Verner, Ben Brewer and Hon. F. E. Brooks are associated in the enterprise.

The Decatur Cement Roof and Block Co., Decatur, Ind., has been capitalized at \$100,000.00 with the following directors: John B. Holthouse, Henry Hite, John Everett, Simeon B. Fordyce, John D. Meyer, James F. Evans and John B. Dutcher.

The Freund Cement Construction Co., Baltimore, Md., has been incorporated with a capital stock of \$10,000.00 by: Henry C. Riale, Solomon B. Myers, and Perry B. Riale, all of Baltimore, and Joseph Freund, of Beaver, Pa., and Jacob De S. Freund, of Edgewood, Pa.

The Brooklyn Cast Stone Co., Brooklyn, N. Y., has been incorporated with a capital stock of \$5,000.00, for the purpose of manufacturing cement building stone. The directors are: Peder Nargard

and Hans Sanholdt, Brooklyn and J. F. Tanggard, Perth Amboy, N. J.

The Morris Hollow Concrete Block and Construction Co., of Granite City, Ill., has been incorporated with a capital stock of \$5,000.00. A factory will be erected for the purpose of manufacturing these blocks. The incorporators are: A. W. Morris, Ralph A. Morris and Vernon Morris.

The Ornamental Stone and Brick Co., Long Beach, Cal., has been incorporated with a capital stock of \$25,000.00, of which \$10,000.00 has been subscribed. The directors are: F. A. Parker, J. B. Heartwell, A. M. Goodhue, J. H. Daly, J. H. Dovey, G. S. Stone and W. Rommell, all of Long Beach.

The Acme Cement Block and Machinery Co., Wellsburg, Ohio, has been incorporated with a capital stock of \$50,000.00 by: N. C. Hunter, J. S. Liggett, W. K. Cummings and T. J. Reid, of Wellsburg, and J. A. Heinz, of Canal Dover. The new company has several contracts to begin with, among them a factory for the Riverside Glass Works.

The Stony Brook Slate and Brick Co., Stony Brook, Pa., is the name of a company newly incorporated for working the slate deposits recently discovered near Springetsbury township, and will make brick out of the shale and waste slate. The incorporators are: John W. Minich and Jacob Ohmit, Wrightsville, and William Isenberg and J. Frank Beyer, Huntingdon, Pa. The capital stock is \$75,000.00.

The Tampa Sand Lime Brick Co., Tampa, Fla., has purchased a full line of machinery from the American Sand-Lime Brick Co. and will soon be ready for business in the manufacture of concrete brick. The company is composed of thoroughly up-to-date business men, Mr. Lee Dekle being president, and they propose to make the enterprise a success. Their machinery is calculated to turn out 20,000 of these brick a day. It is a very superior building material and the price will put them extensively on the market.

The Fond du Lac Cement Brick Manufacturing Co., Fond du Lac, Wis., as just finished the manufacture of a lot of colored brick which is the first they have made, and the finished product appears to be highly satisfactory. The red coloring may be mixed with the crushed stone and sand as it enters the crushing machinery. Considerable coloring matter is necessary, and it is probable that on account of this the price of colored brick will be slightly in advance of the plain product. The intention is, to operate the factory during the winter, and in the spring have a large amount of brick on hand to meet the demand.

The Western Stone Co., Oakland, Cal., which has been incorporated to engage in the manufacture of the Standard concrete building stone for more than a year past, is preparing to install a full line of machinery and largely increase its output. The work of manufacturing cement stone is practically new on the Pacific Coast, and the moulding of cement blocks by the Western Stone Co., of which Councilman J. L. Howard is president and Clarence C. Dakin, resident manager, is at present carried on by hand press. The many orders placed with the company has made it necessary to put in power presses and mixers. The manufactured product is about 80 per cent. cheaper than building stone taken from the quarry and dressed, and it gives entire satisfaction.

The Boyles-Cole Brick Manufacturing Co. is being incorporated at Grand Rapids, Mich. Messrs. Boyles and Cole have recently patented a device for the manufacturing of brick from sand and cement, by pouring cement in at one side and sand in at the other, the device automatically mixes the ingredients for building brick. Mr. Boyles states that the new company will be able to manufacture brick for \$2.50 per thousand, while faced brick can be made for \$3.78 per thousand, and the faced brick may be manufactured of any color desired, while the shape is no barrier. One of the leading features of the patent is the ability of the machine to turn out a veneered or marble finished brick. The marble style will doubtless appeal strongly to builders on account of its cheapness and extreme beauty. When the full amount of stock is subscribed, a factory will be built in Grand Rapids, as a demand has already sprung up for the product. It is said that Grand Rapids capitalists will take up all this stock. The company is to be capitalized at \$150,000.00.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

JOHN A. KLING, Cleveland.....	President
C. B. McCAMMON, Cincinnati, Ohio.....	Vice President
GORDON WILLIS, St. Louis, Mo.....	Vice President
J. N. THAYER, Erie, Pennsylvania.....	Treasurer
RICHARD KIND, Toledo, Ohio.....	Secretary

OFFICERS:

JOHN A. KLING.....	President Cleveland Builders' Supply Co., Cleveland, O.
JAMES G. LINCOLN.....	Vice President Waldo Bros., Boston, Mass.
W. S. HUMBERT.....	Vice President W. S. Humbert, Inc., Buffalo, N. Y.
AMBROSE TOMKINS.....	Vice President Tomkins Bros., Newark, N. J.
ADDISON H. CLARKE.....	Vice President Wm. Wirt Clarke & Son, Baltimore, Md.
S. D. LINCOLN.....	Vice President National Mortar Co., Washington, D. C.
WALTER T. BRADLEY.....	Vice President Walter T. Bradley Co., Philadelphia, Pa.
R. W. MARSHALL.....	Vice President Wheeling Wall Plaster Co., Wheeling, W. Va.
C. E. McCAMMON.....	Vice President L. H. McCammon Bros., Cincinnati, O.
E. E. EVANS.....	Vice President Boutell Bros. & Co., Bay City, Mich.
E. M. BALTES.....	Vice President E. M. Baltes & Co., Ft. Wayne, Ind.
OWEN TYLER.....	Vice President Louisville, Ky.
G. J. PARKE.....	Vice President V. H. Parke & Son Co., Decatur, Ill.
C. P. FLATLEY.....	Vice President Flatley Bros. & Co., Green Bay, Wis.
GORDON WILLIS.....	Vice President Hunkins-Willis Lime & Cement Co., St. Louis, Mo.
J. N. THAYER.....	Treasurer O. C. Thayer & Son, Erie, Pa.
RICHARD KIND.....	Secretary Toledo, Ohio.
HARRY S. WEST.....	Assistant Secretary Toledo, Ohio.

EXECUTIVE COMMITTEE:

JOHN A. KLING, Chairman.....	Cleveland, Ohio.
D. J. KENNEDY, D. J. Kennedy Co.....	Pittsburg, Pa.
C. W. S. COBB, Glencoe Lime & Cement Co.....	St. Louis, Mo.
A. B. MEYER, A. B. Meyer & Co.....	Indianapolis, Ind.
C. H. LITTLE, C. H. Little Co.....	Detroit, Mich.
F. S. WRIGHT, Meacham & Wright.....	Chicago, Ill.
RICHARD KIND, Toledo Builders' Supply Co.....	Toledo, O.

Official Organ, ROCK PRODUCTS.

The McCarthy Improvement Co., Davenport, Ia., is contemplating adding to its facilities a new \$20,000.00 asphalt paving plant which has just been completed at Wilkesbarre, Pa. It is said that with this improvement the company will be in position to bid for paving work with any company in the West, and will also be in a position to give employment to a larger number of men than ever before.

The Asphalt and Granitoid Construction Co., located at St. Louis, Mo., has been incorporated with a capital stock of \$4,000.00.

Look for Higher Prices Soon.

CLEVELAND, OHIO, Aug. 24.—The Diamond Portland Cement Co. write: "We beg to say that we are very busy. By that we mean to say that we are producing all the cement we can, and have not stopped at all this summer, but the prices are low. We believe that some of the cement manufacturers are offering cement for less than cost. For some time we have been shipping each day more than we produce, thus reducing our stock. With the general depression in business there has been a little less demand for Portland cement, but we believe that an increasing demand will make the business much better, and prices higher very soon."

ROCK PRODUCTS.

A Heart to Heart Talk.

Our attention has frequently been called to the lax methods in vogue with builders' supply dealers. If often requires but a glance to judge of a man's business methods.

A recent visit to one of these stores called forth these remarks. The writer saw, without effort, a large percentage of the profits in a rubbish pile. Scattered about in all manner of confusion were broken sewer pipe, lumps of lime, broken bales of hay and grain, deeply embedded in a layer of cement. Just why some men fail to note that this evident leakage is more than half their profit, is amazing. They fall utterly to grasp the all important meaning of the term order. They grow poorer and poorer, and lay awake at night trying to solve the mystery of their failure to check the downward course of their affairs. Can they not see that the very appearance of their store is calculated to discourage customers? It is only natural that people will buy when the appearance of the business house is cheerful and inviting.

Note the difference at the store of the thriving business man who knows the secret of method. He stops the leakage by watching seeming trifles. His place of business compels purchasers; for there is a place for everything, while the other's repels.

He worries less, works no harder, is far more prosperous and sleeps with the sweet sleep of childhood. Don't think this is an overdrawn picture. Have you never observed these conditions yourself? If not, look about you and note the truth of these observations. No man can afford to let his business run itself. It will soon grow weary and die for want of proper nourishment. It is undeniable that the builders' supply business may require a little more attention, a little more cleanliness, on account of the nature of the business itself, but that is taken for granted.

Stop your leakage by a trifler keener insight into the minor details of your business. Note the methods of your employees; do they work for your interests? Don't, however, be "penny wise and pound foolish," to use an old saying, and while grasping at a straw lose your life in the whirlpool of graver duties.

This is merely a heart to heart talk, and we feel sure you will agree with what we have said; for your interests are our own as well.

If you feel that you are guilty, don't become offended but endeavor to profit by our friendly advice. Many of us are blind to our own shortcomings until some friend gives us a gentle reminder. The wise man is he who is willing to learn.

We are not, however, constituting ourselves a corps of critics; on the contrary, endeavoring to assist some, perhaps, to keep their heads above deep water.

WOODFORD, I. T., July 27.—The Ada Asphalt Co. write: "We are located at Woodford, I. T. Please change our address accordingly, that we may receive your paper here."

The American Asphalt Mastic Co., Alma, Mich., has completed its buildings and it is said will make its first shipment soon. The officers of the company are: A. W. Wright, president; Wm. H. Worsick, vice-president; F. R. Hathaway, secretary and treasurer. The company is capitalized at \$115,000.00.

Reports from Nashville, Tenn., state that the Contractors' Supply Co., of that city, has been granted a charter with a capital stock of \$10,000.00 for the purpose of manufacturing clay and asphalt for paving and other construction work. The incorporators are: C. C. Trabue, M. H. Bonner, George A. Frazer, Avery Handly and Thomas G. Kittrell.

The Cuban-American Asphalt Co., Washington D. C., has been incorporated with a capital stock of \$100,000.00, by the following incorporators: Patrick J. Brennan, William A. H. Church, O. Perry Johnson, Nicholas H. Shea and Chester A. Snow.

The Uvalde Asphalt Co., Greene and Essex Streets, Jersey City, N. J., plant which was built in 1900 and cost about \$500,000.00, was almost totally destroyed by fire recently causing a loss of between \$200,000.00 and \$250,000.00, with no insurance. Strenuous efforts were made to save all the machinery possible, but a great deal of material and wagons was lost. Robert T. Rokey is president, and D. O. Fowler has charge of laying the product on the roadways, etc.

SOMEWHAT PERSONAL.

One of our New South Wales subscribers, in writing recently, said: "We must congratulate you on the excellence of ROCK PRODUCTS. The information that we gather can not be had from any other publication."

Who would ever think that Billy Kerber, president of the Furst-Kerber Cut Stone Co., Chicago, was a capturer of burglars? His latest effort in this kind was recently, when two thieves broke into their warehouse and were carrying away brass, but by using the fire arms of the night watchman he was successful. He is big enough to handle most any burglar, but he is a very peaceable gentleman and his many friends will be very much surprised at his locking up these poor men who needed the brass.

Among the visitors at the office of ROCK PRODUCTS this last month, was Capt. D. McL. McKay, vice president and general manager of the Consolidated Stone Co., Chicago. The Captain arrived in town and was accompanied by Frank Fougerousse and Ed Vernia. Now, the Captain is always a good companion and therefore a pleasant evening was spent by the party; the Captain's dog-watch yarns were as spicy as ever and you couldn't get him to talk about stone. However, he was on his way South making a missionary trip. You would never think the Captain was a missionary, on association occasions, but he is. He dreams about Bedford oolitic stone and that new quarry that the consolidated opened up this year, and he is probably telling the people in the Southeast that Bedford stone for all kinds of building is the only satisfactory building stone, and I guess his enthusiasm is responsible for the fact that their mill has been running night and day, and they have had a busy year of it. This will probably be the banner year in the history of the institution. Speaking of strikes and other trade interferences, Captain McKay said: "I regret very much that many of the large trade centers have been interfered with by labor disturbances, and the result has been that the Bedford quarries are not as full of orders as in times past." However, the Captain said he has been able to keep going, and the fact that he spends most of his time in sleeping cars and going about landing big orders for the best stone on earth, is responsible for this.

We dropped in recently on the American Sewer Pipe Co., at Pittsburg, and who should be holding down the ranch as guests of the Western sales agent, Mr. J. O. Freeman, but George Gegnagle, of Schaffer & Gegnagle, of Dayton, and Stanley Rhodes, the crack shot and hustling sales agent for Ohio. Rhodes was very happy, having just landed a 28-mile order for sewer pipe, and so was Freeman, himself. He said business was fairly good. He received about 45 miles of orders yesterday and 17 miles to-day! This last order goes to Xenia. He recently sold 10 miles of water line for Findlay of 24-inch pipe. In fact, the line is just about finished. He is also putting in 3 miles at Lima, part of which is 36-inch pipe. Notwithstanding these big orders Rhodes has time to gain distinction as one of the crack shots in Ohio. He can kill birds at 100 yards without winking his eye. The new officers of the American Sewer Pipe Co. are on the eleventh floor of the Bessemer Building, and the Eastern sales agent, E. R. Goucher, had to get out when this Western crowd appeared, for George Gegnagle with a 45-mile order in his pocket is hard to live with. The fact is his partner had been sending telegrams to find out what had become of him.

At the big plant of the Louisville Gas Co., where ROCK PRODUCTS was visiting with Superintendent Frank Huber we met Mr. P. Plantinga, president of the Cleveland Gas Machinery Co., accomplished engineer and affable companion, who was calling on his force there installing the extensive water gas plant. Mr. Plantinga had a good word for Louisville fire brick which he is using for furnace linings, saying that the material is of the very highest grade. Mr. Huber who has used this material for a long time, says it is the best fire lining he has been able to find. The Louisville Gas Co.'s coal gas plant was the first successful inclined retort installation in this country, and is constructed of Leclerc Fire Brick. This pioneer incline plant has been the model for many subsequent installations, all of which have proved very successful.

Mr. H. J. Livingston, 306 East Lexington Street, Baltimore, Md., has recently patented a method for using Annealed Cement for joints in cement construction and for attaching the outside or finishing coat. From what has been learned of this cement it is inexpensive, and where the joints are made of this material they never break, but rather in the concrete itself, and the claim is that joints when made of annealed cement are practically as good as monolithic construction.

The St. Louis Transit Co., which operates the larger part of the street car system in St. Louis, has found itself short of power ever since the World's Fair began to attract large numbers of visitors. The traction plant was working at an almost constant fifty per cent. overload, and at rush hours the excess reached extreme proportions. The railway company has now applied to the World's Fair Authorities for additional power, with the result that Governor Francis and the Fair administration have, by contract, put at the service of the railway company during the day, from 2 p. m. until 7 p. m., when the loads are heaviest, the service of the huge Allis-Chalmers engine in the Machinery Building. This engine, which is coupled to a Bullock electric generator, and which when operating at 75 revolutions per minute, at a steam pressure of 150 pounds, and operating non-condensing, is capable of developing 8,000 h. p., is the central feature of the Machinery Building. From 8 p. m. until the Fair grounds close, this powerful unit supplies the current of the decorative lighting of the buildings and grounds, which forms the most conspicuous attraction of the Exhibition. The lighting requires 200,000 incandescent lamps. The traction load which the engine and generator will now carry by contract between the railway company and the Exhibition authorities, will be at least 3,000 h. p., to begin with, and may be much increased as the World's Fair crowds are augmented. It is this engine which has won, at St. Louis, the popular name of "The Big Reliable."

INFORMATION BUREAU.

852.—We would like to know if there is a concern in Wisconsin selling country rights for manufacturing cement monuments.

853.—We would like to correspond with parties having new or good second-hand stone-working machinery; also a 10 or 15 ton locomotive crane.

854.—I want to know who makes and installs gas producer machinery; suitable system for use in lime kilns.

Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 50c a line. Count eight words to a line; add two lines for a head.

WANTED—HELP.

SALESMAN—Experienced and high-class salesman, successful in contractors' trade, to handle a leading make of rock drills and compressors. Address Box No. 30, care ROCK PRODUCTS.

SALESMEN—Two experienced marble and granite salesmen to work on salary under our directions; we want men thoroughly up to the marble business. Address JOHNSON MARBLE WORKS, Quitman, Georgia.

SALESMEN—We want good salesmen all over the South for the Winget building block machine. Address A. D. MACKAY & CO., Chamber of Commerce, Chicago, Ill.

WANTED—MISCELLANEOUS.

TWO OR THREE COPIES of No. 7, Vol. 1, ROCK PRODUCTS. Address ROCK PRODUCTS, 431 West Main Street, Louisville, Ky.

BUSINESS OPPORTUNITIES.

SALE OR TRADE.—A small stock of granite and marble monuments in a good town and good territory. For particulars write Box 31, Cambridge, Illinois.

GRANITE QUARRY IN NEW YORK STATE.—A splendid opportunity for the development of a granite quarry in the eastern part of New York State, 75 miles from New York City; nearest point to a railroad, two and one-half miles that runs to New York City; easy grade; thirty acres exposed granite in sight, more underlying; free from minerals and surface seams; has bed seams and rift; five great wide long spurs, free from grout, each different in color and texture, from fine-grained dark blue to clouded, resembling marble, with similar markings and make-up of Milford, Mass. Write to confer, to open up in first-class shape and consider terms. Experts report supply inexhaustible; best up-to-date building stone; uniform and warm color; will quarry any dimensions; breaks across the quarries, chips off good, holds a corner, cuts, letters, takes a good polish, and granite enough to more than supply New York State and her cities for all time. Communicate with owner, THEODORE WING, Dover Plains, Dutchess Co., N. Y.

HALF INTEREST IN QUARRY FOR SALE.—One-half of the best general purpose limestone quarry in America; located at Kokomo, Ind., with twice as much business last year as we could do, with a million dollars worth of good stone in site; crushing plant and grinder in the quarry and railroad switch, giving shipping facilities over three roads. One contract of ground stone for glass purposes ten months in the year has netted us from \$10.00 to \$15.00 per day; artificial stone and hollow blocks have been successfully made by two men from glass dust; our territory for sale of stone is from Indianapolis to Michigan City, and Ohio to Illinois with sale in a dozen counties near by that have no stone; on account of old age and poor health will sell one-half interest of 27 acres of quarry on easy terms. For particulars see or write G. W. DEFENBAUGH, Kokomo, Indiana.

CONTROLLING INTEREST in the best trap-rock quarry near Boston, with millions of tons of stone in sight, crushing plant and all machinery and tools to carry on granite or trap rock business; will be sold on very easy terms; poor health the cause of selling. Address R., care Rock Products.

LIME QUARRY.—Extensive strong lime quarry, best for concrete; calcium carbonate, 93% high ridge acres quartz sand, white and red, adjoining lime, good for cast stone and brick; will sell below competition on account of age; location good, near city growing finely. Address A. A. JENNE, 521 Woodland Ave., Petoskey, Michigan.

WANTED—POSITION.

SUPERINTENDENT or foreman for stone quarry or crusher plant; can furnish best of references and thoroughly understand all kinds of machinery. Address WM. McDONALD, 310 West 143d Street, New York City.

FOR SALE—PLANT.

STEEL LIME KILN.—Used but three months; cheap. Address C. S. Co., care Rock Products.

WANTED—MACHINERY.

STEAM SHOVEL.—Small, second-hand. Address THE WALLACE CO., Port Austin, Mich.

FOR SALE—MACHINERY.

CRUSHERS, ETC.—One 9 ft. Bonnot dry pan; one 32 in. x 36 in. Link Belt Machinery Co., coal crusher; both machines practically new; one Blake jaw rock crusher, 8 in. x 15 in, opening; fair condition. Address ELK PORTLAND CEMENT AND LIME CO., Elk Rapids, Mich.

CRUSHING, GRINDING AND PULVERIZING MACHINERY.—Large variety for sale at a bargain. Inquire of J. R. ALSING CO., 136 Liberty Street, New York City.

STEAM SHOVEL.—One "Giant B Special" 70-ton Vulcan steam shovel No. 122, complete with 2½ yard dipper, at a bargain; good as new. Address N. J. CARY, Sec'y, Utica, Ill.

GRANITE POLISHERS AND TOOLS.—Second-hand. Address O. H. HAVILL, St. Cloud, Minn.

STEAM TRAVELING CRANE.—55 ft. span, 25 ton capacity. Address FRED ANDRES & CO., Milwaukee, Wis.

TWO JAW CRUSHERS.—18-in.x36-in., equipped with manganese steel jaws. Made by Ferial Foundry and Machinery Co. For particulars inquire of CLINTON POINT STONE CO., 170 Broadway, New York City.

VICTOR STEAM SHOVEL.—Yard and one-half dipper; 45 h. p. boiler; shovel has been used but seven months. As we have no use for steam shovel, will sell cheap. Address VICTOR, care Rock Products.

"CREDIT RATINGS AND REPORTS TO THE TRADE."

The Granite Exchange Co., confidential book and key revised annually containing names, addresses, ratings, etc., of the granite, marble, stone, quarries, monumental dealers and workers throughout the United States and Canada. Reports everywhere without extra charge. Attorneys over towns and cities under contract to handle any legal business. Trade references from leading concerns using us many years, if desired, also any further particulars upon request. Try us one year and be convinced yourself of the merits of same.

Subscription price \$25.00 per year, including full service.

ADDRESS

REED O. OXNARD, Secretary.
No. 20 Pemberton Square, BOSTON, MASS.

**CONTRACT MANUFACTURING.**

Will furnish all the necessary Special Tools, Dies and Patterns in connection therewith.
WE ACT AS YOUR FACTORY AND SHIP DIRECT TO YOUR CUSTOMER.
Inventions Perfected. Miniature and Full-Sized Working Models. DESIGNERS AND CONSTRUCTORS OF SPECIAL LABOR-SAVING MACHINERY. CONSULT US FREE. ESTIMATES SUBMITTED.

MICHIGAN NOVELTY WORKS, 220 Rose St., Kalamazoo, Mich.

ALPHABETICAL INDEX OF ADVERTISERS.

Aetna Powder Co.	64	Century Cement Machine Co.	51	Hicks, F. M. & Co.	38	McKenna, David	39	Reese, Walter, G.	39
Alamo Mfg. Co.	54	Central Ohio Lime & Stone Co.	47	Hooker Bros.	60	McMillan, C. W. & Son	56	Revins, W. H.	38
Allis-Chalmers Co.	4	Chattanooga Paint Co.	47	Hunt, A. M., Co.	38	Nash, A. L.	36	Ricketson Mineral Paint Co.	39
Alsing, J. R. Co.	66	Chemical Stucco Retarder Co.	45	Indiana Bedford Stone Co.	3	National Brick Machinery Co.	6	Robins Bros.	56
American Clay-Working Mac. Co.	6	Chicago Portland Cement Co.	48	Ingersoll-Sergeant Drill Co.	61	National Drill and Mfg. Co.	65	Rochester Lime Co.	40
American Hydraulic Stone Co.	50	Cleveland Car Co.	53	Jeffrey Mfg. Co.	64	National Wall Plaster Co.	39	Rogers Granite Co.	58
American Process Co.	45	Clyde Iron Works	41	Kennedy, L. E., & Co.	38	Newaygo Portland Cement Co.	48	Rowe, John A.	3
American Sand-Lime Brick Co.	50	Coldwell-Wilcox Co.	61	Kent Mill Co.	63	New Albany Stone-Working Mac. Co.	67	Royce, Estate of Geo. E.	56
American Sandstone Brick Machinery Co.	49	Contractors Supply & Eq'm't Co.	40 & 65	Kotten, H. G.	66	Norris & Christian Stone and Lime Co.	43	Ruggles-Coles Engineering Co.	45
American Sewer Pipe Co.	68	Cottom, J. B.	52	Lane, W. A.	56	O'Connell, James	5	Schwarz-System Brick Co.	49
American Soapstone Finish Co.	45	Dallett, Thos. H. Co.	62	Lane Mfg. Co.	56	Ohio Fiber Machinery Co.	45	Seamans, E. W.	52
Anderson, A. & Sons	58	Des Moines Mfg. & Supply Co.	61	Langefeld Granite Co.	57	Ohio Lime Co.	43	Scott & Townsend	54
Art Stone Publishing Co.	39	Detroit Cement Tile Co.	49	Lapham, N. Co.	47	Ohio Wood Fiber Plaster Co.	44	Shaw, Willia	64
Ash Grove White Lime Ass'n	47	Dunning, W. D.	65	Lehigh Portland Cement Co.	48	Ohio Retarder Co.	44	Sinop, S. W.	39
Atlas Car & Mfg. Co.	68	Eldred, Byron	6	Lombard Foundry Machine and Boi'er Works	38	Oldham, Geo. & Son	67	Smith, F. L. & Co.	40
Atlas Portland Cement Co.	68	Elli Portland Cement Co.	48	Louisville Drying Mach'y Co.	62	Omega Portland Cement Co.	48	Smith, E. L., & Co.	56
Austin Mfg. Co.	60	Elyria Plaster Machinery Co.	44	Louisville Fire Brick Works	50	Oolithic Stone Co., of Indiana	3	Standard Sand & Machine Co.	50
Bostwell, James	59	Elyria Wood Plaster Co.	44	Lycoming Calcining Co.	42	Oxford, Reed O.	37	Stanton, Elmer E.	53
Bowers, R. C.	58	Emslie, McLeod & Co.	58	Mackay	37	Ozark Cooperage Co.	47	Stedman Foundry and Machine Works	53
Banner Cement Co.	48	Fisher, W. H.	5	Mackay, A. D., & Co.	38	Palmer, Harmon S. Co.	50	Stevens Cast Stone Co.	53
Barre White Granite Co.	56	General Fireproofing Co.	48	Macomber & Whyte Rope Co.	2	Palmer Mfg. Co., Noyes F.	38	Sidron, E. H. & Co.	64
Beal Bros.	54	Goetz, Chas. W. Lime & Cement Co.	48	Maguire & Heron	55	Parry, L. J.	6	Stileman Mill Co.	2
Bartlett, C. O. & Snow Co.	38	Grand Rapids Plaster Co.	39	Macias Granite Co.	28	Paxson, J. W. Co.	23	Sullivan Machinery Co.	66
Bedford Steam Stone Works	3	Granite Construction Co.	58	Mabas & Co.	3	Pebinsular Portland Cement Co.	48	Swindell, Wm. & Bros.	45
Bell, Edwin Co.	46	Granite Kailway Co.	55	Main Belting Co.	60	Pennsylvania Structural Steel Co.	39	United States Gypsum Co.	44
Bilodeau, J. O.	56	Garry Iron & Steel Co.	45	Manhattan Tool Co.	66	Perry-Matthews-Buskirk Stone Co.	3	U. S. Brick Press Works.	6
Binne Stucco Retarder Co.	44	General Fireproofing Co.	39	Manex, T. F.	55	Pettijohn Bros.	51	U. S. Drying Engineering Co.	37
Bishop, Joseph	55	Goetz, Chas. W. Lime & Cement Co.	48	Martin, Henry, Brich Mac. Mfg. Co.	38	Phillips Co., Thomas	44	Vermont Slate Co.	39
Boileau & Lyon	39	Hardscog Wonder Drill Co.	67	Martinson, J. A. & Co.	54	Pirie, J. K.	55	Warner, Chas. Co.	48
Bostwick Steel Lath Co.	39	Harrison Supply Co.	6	Marvin Electric Drill Co.	38	Pirie Tool Sharpening Machine Co.	55	Wentz, Robert F.	39
Blaisdell Machinery Co.	10	Hawkrige Bros.	61	Michigan Cement Block Machinery Co.	52	Pratt, D. W.	2	Western Cement Co.	47
Broomell, Schmidt & Steacy Co.	42	Henderson Route.	58	Michigan Novelty Works.	37	Pulsometer Steam Pump Co.	58	Western Lime and Cement Co.	50
Buckeye Portland Cement Co.	48	Haley, Matt.	56	Miles Concrete Building Block Machinery Co.	49	Raymond Bros. Impact Pulverizer Co.	63	West Leechburg Steel Co.	61
Butterworth & Lowe	61	Hardscog Wonder Drill Co.	67	Miller & Huntington	52	Raymond Mill Co., Geo.	62	Wheeling Wall Plaster Co.	40
Catawissa Car & Foundry Co.	38	Harrison Supply Co.	6	Milwaukee Bag Co.	6	White-Blakeslee Mfg. Co.	61		
Cavicchi, E.	58	Hawkrige Bros.	61	McDonald, Cutler & Co.	57	White Rock Co.	38		
		Henderson Route.	58			Williams Pat. Crusher and Pulverizer Co.	45	Woodbury Granite Co.	57

ROCK PRODUCTS.

ORE CARS
Special Bargain—Immediate Delivery.

F. M. HICKS & CO., CHICAGO

W. H. RHAWN, Pres. J. K. SHARPLESS, Treas. C. E. RANDALL, Sec'y.

Catawissa Car and Foundry Co.

CATAWISSA, PA., U. S. A.

**Car Wheels, Castings, forgings,
Flat Cars, Mine and Dump Cars.**AND ALMOST ANY ARTICLE OF COMMERCE
OF WOOD OR IRON, OR BOTH.

Orders Promptly Filled.

Inquiries Solicited.

BOILERS and ENGINESTanks, Stacks, Standpipes and
Sheet-iron Work.Shafting, Pulleys, Gearing, Boxes, Hangers, etc.
Building Castings—cast every day.

Capacity 300 hands.

Large stock of Pipe, Pumps, Injectors, Valves,
and Fittings.**LOMBARD FOUNDRY, MACHINE and
BOILER WORKS, Augusta, Ga.****BARGAINS—CHEAP.**

One 13x30 Blake Pattern Crusher, also others.
One 20 ton Overhead Traveling Crane.
16x36 Wright-Corliss Engine, also others.
Three Large Pumps, also others.
We buy all kinds of Machinery, Rails, Crushers,
Locomotives, Scrap Iron and Metals and Old Felt.
L. E. KENNEDY & CO.,
17 Broadway, New York City.

**WE CONVEY AND ELEVATE
EVERYTHING.**
TACKS, SAND, ROCK, ORES,
RED HOT IRON, MOLTEN
SLAG, COAL AND SALT.

**CONVEYORS
AND
ELEVATORS**
MADE BY
THE C. O. BARTLETT & SNOW CO.
CLEVELAND, O.

**B. Bedford B. Buff B. Blocks
AND Sawed Stone.**

We are in a position to furnish choice Buff Blocks or Sawed Stone on short notice and at best prices. Address all communications to

THE EAGLE STONE CO.
BLOOMINGTON, IND.**Book of Credit Ratings
and Financial Reports**

FOR THE GRANITE AND MARBLE TRADE.

New edition just issued. Send for subscription rates. References, any of the Leading Granite Manufacturers.

**UNITED MERCANTILE AGENCY,
A. M. HUNT & CO., Proprietors,**

131 Devonshire Street, BOSTON, MASS.

STONE CUTTERS

SAVE LABOR. USE
Nash's Expeditious Measurer.
A book containing 200 pages of indexed tables, which show at a glance the cubic contents of any stone according to its length, breadth and depth. Used by stone workers all over the world. Order of your bookseller or address the publisher. 1902 edition printed Entirely from New Plates. Price, \$2.00 postpaid.

A. L. NASH,
17 State Street, NEW YORK.

AVOID ERRORS.

**ROCK PRODUCTS,
\$1.00.—ONE YEAR.—\$1.00.****MARVIN
ELECTRIC ROCK DRILLS**

Are in daily use that have been in continuous service

SIX YEARS.

Ordinary men taught to use them in two to four weeks.

WORK at any temperature or altitude, outside or under ground.

Safe, Efficient, Durable and Simple.

Write for particulars to

Marvin Electric Drill Co.
BINGHAMTON, N. Y., U. S. A.**WHITE ROCK.**

It is expensive to use a poor hydrate of lime no matter how cheap its first cost. The damage that can be done through the swelling, pitting or popping of poor hydrate under certain conditions is enormous.

"TIGER BRAND WHITE ROCK FINISH" is the highest priced hydrate manufactured, but it is the best.

THE WHITE ROCK CO., Toledo, Ohio.

Tell 'em you saw it in ROCK PRODUCTS.

The best claims our competitors make, is, that their Mortar Colors are as good as

"RICKETSON'S."

We absolutely manufacture the strongest and highest grade

Mortar Colors and Mineral Paints

in the market. Contain more coloring properties than any other.

RICKETSON MINERAL PAINT WORKS MILWAUKEE, WIS.

NATIONAL WALL PLASTER CO., OF AMERICA

MANUFACTURERS OF

Gypsum and Calcined Plaster.

539 Onondaga County Savings Bank Building,

SYRACUSE, N. Y.

BOILLEAU & LYON,

Consulting Engineers,

First National Bank,

EASTON, PA.

Cement Properties—Analyses and Estimates

YOUR INQUIRIES ARE WELCOME.

WHAT IS INSIDE OF THE WORLD'S FAIR

AND HOW TO SEE IT AT THE
LEAST EXPENSE.

The Henderson Route has gotten up and is now offering for free distribution a very complete and valuable booklet descriptive of what is inside and what is outside of the World's Fair, and how to see it at the least expense.

The booklet contains information of such value, that all prospective visitors to St. Louis should have a copy.

How to reach the Fair Grounds upon arrival in St. Louis, how to get around the grounds to the best advantage, the most economical plan for touring the Exposition, things of importance to see in St. Louis, together with many other valuable pointers regarding a trip of this nature, are only some of the many points covered in this complete booklet.

It is something you should have before planning your World's Fair trip and can be obtained by addressing Mr. L. J. Irwin, General Passenger Agent, Henderson Route, Louisville, Ky.

SLATE.

... FOR ...
BLACKBOARDS
AND
URINAL STALLS
— WRITE —
PENN'A STRUCTURAL SLATE CO.,
EASTON, PENNSYLVANIA.

SLATE! SLATE!! SLATE!!!
BLACK BOARD FOR SCHOOLS.
ROOFING SLATE FOR HOUSES.
Are you going to build a Home? I trust you are, and that you will put on it for a Roof (one of the most important things about a house) SLATE, which is always CLEAN, FIREPROOF and BEAUTIFUL. Write for prices, and I will tell you all about SLATE. DAVID MCKENNA,
Slatington, Pa.

THE VERMONT SLATE CO.,

INCORPORATED.
MANUFACTURERS OF

Sea Green Roofing Slate
AND JOBBERS IN ALL KINDS OF
Black Slate, Black Boards, Etc.
GALVANIZED AND BLACK SHEETS,
CORRUGATED IRON AND STEEL ROOFING.
Granville, N. Y. and Zanesville, O.
Quarries: West Pawlet, Vt. Eastern Office: Granville, N. Y.
Western Office and Warehouse: Zanesville, Ohio, Corner
Main and Ninth Streets.

CHEMISTS AND ENGINEERS.

FROEHLING & ROBERTSON,
Chemists, Chemical and Mining Engineers.

SPECIALTY—CEMENT AND CLAY PRODUCTS.
Examination of Cement Properties, Analysis of Cement Raw Materials and Experimental Burnings, Plans, Specifications and Estimates of costs of Cement Plants, Cement Testing Analyses.

Office and Laboratories 17 S. Twelfth Street, Richmond, Va.

S. W. SHOOP & CO.
FRONT ROYAL, VIRGINIA.

Designers and Builders of the
SHOOP IMPROVED PATENT LIME KILNS.
Designing and Installing a Specialty.

ROBERT F. WENTZ, M. W. S. E.

CONSULTING ENGINEER AND

Expert Designer of Cement Plants.

Your consultation solicited for the inspection of materials, examination and reports of cement properties, the analysis and testing of cement and cement materials.

I can furnish you Plans and Specifications; Estimates of Cost; Superintendence of Construction; Preliminary Sketches of Cement Plants.

Address communications to ROBERT F. WENTZ, M. W. S. E.

Lock Box 15, NAZARETH, PA.

Great Returns For a Small
Investment.

Try a few lines in our
Wanted and For Sale Department.

Tell 'em you saw it in ROCK PRODUCTS.

TO THE DEALER.

If you handle Metal Lath you will be interested in knowing that

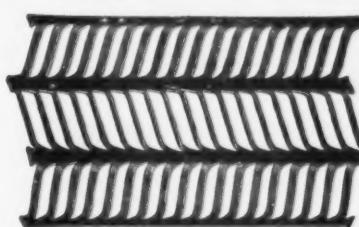
BOSTWICK STEEL LATH

Stands at the head of the procession of Metal Lath products of the country. There is not a State or large city in the United States where it has not been used. It is stiff, economical and growing in popularity.

WE MAKE CORNER BEAD

The kind that protects corners. It prevents chipping of plaster.

THE BOSTWICK STEEL LATH CO., Niles, Ohio.



Herringbone Expanded Steel Lath

— IS MADE BY —

The General Fireproofing Co.

YOUNGSTOWN, OHIO.

WHO ARE ALSO CONSTRUCTORS OF

Expanded Metal-Concrete Fireproofing

OFFICES

New York Chicago Pittsburgh Washington

THE ONLY BOOK ON THE SUBJECT.

"ART STONE."

By F. W. HAGLOCH, Consulting Engineer
in Concrete, Stone and Steel Construction.

Gives clear, concise and detailed instructions for making Hollow Concrete Building Blocks, Trimmings, Ornaments, etc.

Formulas for making and coloring stone in imitation of the products of all American quarries.

Every hand and machine process described in all its details. A catechism of over 100 questions and answers on making and moulding stone.

Brief reviews of patents bearing on the subject, to which is appended a glossary defining words, phrases and terms peculiar to the trade.

Cloth Bound. PRICE, \$1.50 Postpaid.
ART STONE PUB. CO., Rose Building, Cleveland, Ohio.

If You Want a

CHARTER

Permitting Widest Possible Scope of
Business Operation,
Imposing Only Nominal Obligations

INCORPORATE

Under the Laws of

ARIZONA

Free Information

WALTER G. REESE, Prescott, Ariz.

WHEELING WALL PLASTER CO.,

MANUFACTURERS AND JOBBERS

Wheeling Plaster and Builders Supplies.

WHEELING, - - WEST VIRGINIA.

ROCHESTER LIME CO.

209 Main St., West, Rochester, N. Y.

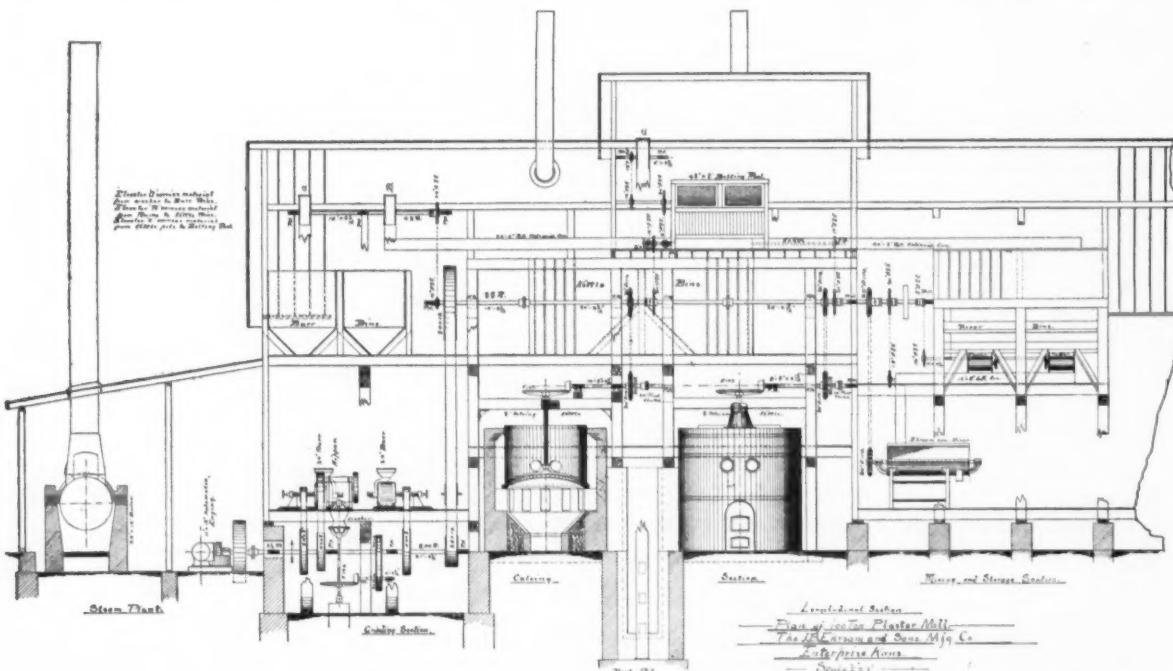
MASONS' SUPPLY DEPOT.

Manufacturers of, and Wholesale Dealers in

Snow Flake Lime, Cement Building Blocks, Alpha Portland Cement, Hoffman Rosendale Cement, Cummings Akron Cement, Kings Windsor Wall Plaster, Kings Plaster Paris, Fire Brick, Fire Clay, Dynamite, Caps, Exploders, etc.

FOR SALE:—A good crushed stone plant; lease on 15 acres fine Southern Granite. No. 6 Gyratory Crusher complete with elevator, screens, steam drills, boilers, engine, derrick and large quarry equipment all set up ready to run.

Contract for large amount of crushed ballast already on hand. Address CONTRACTORS' SUPPLY & EQUIPMENT COMPANY, No. 232 Fifth Avenue, Chicago, Ill.



**WE
MANUFACTURE**

Calcining Kettles
Jaw Crushers
Rotary Crushers
Bolting Reels
Shaking Screens
Turkey Emery Rock
Burr Mills
Plaster Mixers
Hair-Pickers
Conveying, Elevating
and Power
Transmitting
Machinery.

We are prepared to submit plans and estimates for the complete equipment of wall plaster mills, and furnish all machinery required of our own manufacture and design. **Special Machinery to meet special requirements.** Twenty years experience in building and equipping Wall Plaster Mills. New Catalogue in press. Write for a copy. Address

**The J. B. EHRSAM & SONS MFG. CO.,
ENTERPRISE, KANSAS.**

Tell 'em you saw it in ROCK PRODUCTS.

There was a time when any old kind
of LIME would do.

To-day It's the Best Manufactured, Best Working,
Easiest to Handle, Hydrated Lime that pays Dividends.

HYDRATING LIME SPECIALISTS

We Manufacture by Our Own System of Hydrating. We can show you big advantages of our System over others. No Royalties, low first cost of Machinery, small amount of power needed, large output at low cost of operating.

OUR STRONG POINTS:

**Simple, Effective
Inexpensive**

The Only Hydrating Machine in which material is always in plain sight. The Only Machine that makes a perfect mixture, no matter what class of work is being done, such as mixing Concrete, Cement, Mortar, Plaster and any similar Material.

**CLYDE IRON WORKS
DULUTH, MINNESOTA.**

HYDRATING LIME SPECIALISTS.

Lycoming Calcining Co.

Miners of GYPSUM and
Manufacturers of CALCINED PLASTER.

Gives the very best results in manufacturing
WALL PLASTER and WOOD PULP PLASTER.

MILLS AND MINES:
GARBUTT, Monroe County, NEW YORK.

ADDRESS ALL COMMUNICATIONS TO
Main Office, WILLIAMSPORT, PA.

**E. S. NEWTON, President.
1829.**

**GEO. E. NEWTON, Treasurer.
1904.**

Seventy-five years of successful business is our proud record.

WE ARE PRODUCING THE HIGHEST GRADE OF
**Nova Scotia Land and Pure White
Windsor Calcined Plaster.**

Our extensive plant is complete in every department.
The latest mechanical improvements.
Unsurpassed facilities for filling large orders promptly.
Abundant resources.
Send us your orders and let us figure for you.
We can give you absolute guarantee of reliable goods.
Our long experience is at your service.

**RED BEACH PLASTER CO.
RED BEACH, ME.**

Keystone Continuous Burning Lime Kiln



Single kiln as it appears when erected ready for charging platform and building. This cut shows the interior of the kiln. Note the steel deflection plates at the top to protect the brick wall. Note the handy position of car to receive the lime.

BROOMELL'S PATENT.

Built in the most substantial manner from heavy steel plates; can be set singly or in a battery; easily set up by unskilled labor; no foundations required above the ground level, large storing space for rock at the top.

Either wood, bituminous coal, producer gas or natural gas can be used as fuel.

Manufactured by

Broomell, Schmidt & Steacy Co.

YORK, PENNSYLVANIA.

Tell 'em you saw it in ROCK PRODUCTS.

The Ohio Lime Company,

MANUFACTURERS OF AND WHOLESALE DEALERS IN

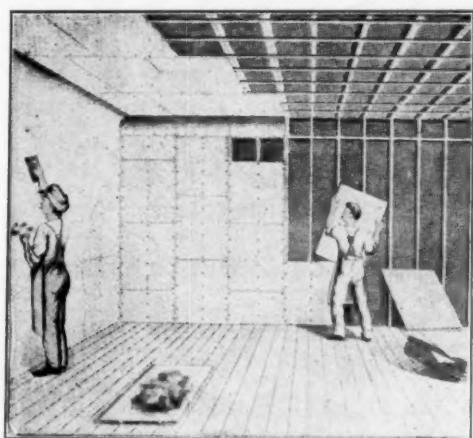
WORKS AT
Fostoria, Ohio.
Gibsonburg, Ohio.
Sugar Ridge, Ohio.
Tiffin, Ohio.

**Ohio White Finishing Lime,
Ground Lime, Lump Lime,
Fertilizer, Hydrate Lime,
Cement, Plaster,
Hair, &c.**

Capacity
3500 Barrels
Per Day.

OFFICE:
209-210-211 CHAMBER OF COMMERCE BUILDING.

TOLEDO, OHIO.



Sackett Plaster Board

A material used in the construction of Walls and Ceilings in place of wood and metal lath. Made in Sheets 32" x 36", $\frac{1}{4}$ " thick. Nailed directly to studding and finished with hard plaster.

Sackett Plaster Board is light, economical and durable. Will not warp, buckle or shrink. Is warmer than lath, consequently saves fuel. Is a fire retardant recognized by fire underwriters.

Walls and Ceilings constructed with these boards cannot fall.

GRAND RAPIDS PLASTER CO.

Manufacturers of Wall Plasters,
Calcined Plasters and other Gypsum Products.

WESTERN SALES AGENT.

GRAND RAPIDS, MICH.

**Big
B**



Lime.

BIG B LIME

ITS STORY OF SUCCESS.

OUR COMPANY:

The Norris and Christian Stone and Lime Company, Marion, Ohio, 20 years of experience.

OUR PLANTS:

Three plants comprising seventeen kilns, with daily capacity of 6000 bushels.

OUR RAILROAD FACILITIES:

Pennsylvania Company; The Big Four System; The Erie System, 3 Divisions; The Hocking Valley; assuring prompt shipments.

OUR LIME:

Cool working, free slaking, suitable for all purposes. Popular for SAND LIME brick. Sold in bulk and in barrels.

OUR STONE DEPARTMENT:

Crushed Stone for Macadamizing, Railroad Ballast, special sizes for Concrete, White Fine Screenings for Driveways and Parks.

**THE NORRIS AND CHRISTIAN STONE AND LIME CO.
MARION, OHIO.**

Tell 'em you saw it in ROCK PRODUCTS.

MASTIC

**THE NEW PROCESS
Wood Fiber Wall Plaster.**

A Winner from the beginning. Architects and Artisans unite in its praise. The demand for this famous brand of wall plaster fast becoming universal. Formulas and machinery protected by U. S. letters patent. Territory rights to manufacture for sale on reasonable terms. Plans and specifications for new mills furnished. Machinery supplied and located at minimum cost. Trade supplied with MASTIC from our mills. If this looks good to you write

**The Ohio Wood Fiber Plaster Co.,
COLUMBUS, OHIO.**

Stucco Retarder.

A stucco retarder absolutely uniform in strength. Strongest retarder made. Insures a slow and gradual set. Samples free for tests. Information concerning plaster formulas furnished.

**The Ohio Retarder Co.,
PORT CLINTON, OHIO.**

STUCCO RETARDER.

We are the largest manufacturers of Retarder in the world.

We guarantee our goods to be equal, if not superior, to any on the market.

We will prepay freight on samples for tests, to any part of the United States or Canada. Information regarding the manufacture of Wall Plaster, cheerfully given.

THE BINNS STUCCO RETARDER CO., Uhrichsville, Ohio.

Special Machinery

for the making of

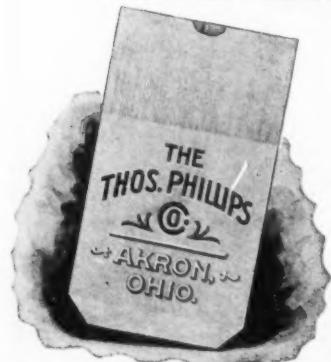
Wood Plaster

Plants installed complete.
Economy and capacity recognized.

WRITE FOR PARTICULARS.

**ELYRIA PLASTER MACHINERY CO.
ELYRIA, OHIO.**

PAPER SACKS



THE MOST CONVENIENT.
SATISFACTORY &
CHEAPEST PACKAGE FOR
**CEMENT,
PLASTER,
HYDRATED LIME**

WE SHALL BE PLEASED TO SEND
SAMPLES AND QUOTE PRICES.

**United States Gypsum Co.
General Offices, 184 LaSalle Street, CHICAGO, ILL.**

Manufacturers of
WALL PLASTERS
Unsanded

Alabaster Cement Plaster.
Big 4 Cement Plaster.
Diamond Cement Plaster.
Duncombe's Cement Plaster.
Flint Cement Plaster.
Granite Cement Plaster.
Ivory Cement Plaster.
Imperial Cement Plaster.
K. & N. Cement Plaster.

O. K. Cement Plaster.
Rock Cement Plaster.
Roman Cement Plaster.
Red, White and Blue Cement
Plaster.
Waterloo Cement Plaster.
Zenith Cement Plaster.
Baker Cement Plaster.

Prepared WALL PLASTERS Sanded.

Adamant Wall Plaster.
Big 4 Wall Plaster.
Diamond Wall Plaster.
Granite Wall Plaster.
Ivory Wall Plaster.

Imperial Wall Plaster.
Rock Wall Plaster.
Zenith Wall Plaster.
Baker Wall Plaster.

BRANCH OFFICES: Ft. Dodge, Iowa; New York Life Bldg., Omaha, Neb.; 480 Virginia St., Milwaukee, Wis.; Lumber Exchange, Minneapolis, Minn.; Foot of Tower Ave., West Superior, Wis.; Hammond Bldg., Detroit Mich.; Indianapolis, Indiana; Sandusky, Ohio.

Tell 'em you saw it in ROCK PRODUCTS.

PATENT SOAPSTONE FINISH PLAIN AND IN COLORS FOR WALLS AND CEILINGS.

Patent Soapstone Mortar.

Prepared in any Color for Laying Pressed and Enamelled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING.
CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO.
C. P. DODGE, Proprietor. CHESTER DEPOT, VT.

Stucco Retarder.

Our Stucco Retarder is the Oldest, Strongest, and most Uniform Retarder on the market to-day. A trial order will convince you.

PREPAID SAMPLE SENT UPON REQUEST.

CHEMICAL STUCCO RETARDER CO.,
Incorporated 1895. WEBSTER CITY, IOWA.

SPECIAL MACHINERY AND FORMULAS FOR THE MANUFACTURE OF

WOOD FIBER PLASTER, FIRE PROOF-
ING AND KINDRED PRODUCTS.

The Ohio Fiber Machinery Co.

We furnish the latest improved FIBER MACHINE, (fully patented), also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts. WRITE FOR TERRITORY.

J. W. VOGLESONG,
GENERAL MANAGER.

Elyria, Ohio.

DRYERS

For Limestone, Shale, Sand, Slag, Marl,
Coal, Ores and All Other Materials. ↗

RUGGLES-COLES ENGINEERING CO.,

39 Cortlandt Street,
1290 Old Colony Building,

NEW YORK.
CHICAGO.

THE WILLIAMS PATENT CRUSHER AND PULVERIZER CO.



MANUFACTURE
CRUSHERS AND PULVERIZERS

FOR ALL MATERIAL ENTERING
CEMENT, LIME, ART STONE and PHOSPHATE.
2711 N. Broadway. ST LOUIS
Gen'l Sales Dept., 848 Old Colony Bldg., Chicago, Ill.
Western & Pacific: 42 Stuart St., San Francisco, Cal.

Improved Automatic DRIERS

Specially Adapted to Sand, Lime, Stone, Clay, Etc.

CAPACITY AND ECONOMY. NO WEAR AND TEAR.

American Process Company

62 WILLIAM STREET, NEW YORK, N. Y.

Swindell Patent Lime Burner

and Swindell Patent Water Seal Gas Producer.

The only successful method of Burning Lime
with Producer Gas.

40 per cent. increase in output of Kilns.
30 per cent. Saving in Fuel.

Eight Kilns in successful operation for past seven months at Toledo
White Lime Co.'s plant, Martin, Ohio.

WM. SWINDELL & BROS.

German National Bank Building,

PITTSBURGH, PA.

Tell 'em you saw it in ROCK PRODUCTS.

WE MANUFACTURE

The Finest Qualities Dry Mortar Colors,

Red (2 shades,) Black,
Buff, Brown, also
Makers of Graphite

Mineral Red and
Purple Oxide
Paints.

Samples and Prices furnished
upon application.

We protect the Dealers.



WE SELL COOPERAGE

QUALITY HIGH ATTRACTIVE PRICES

*THAT'S THE DOUBLE IMPRESSION
WE AIM TO GIVE OUR CUSTOMERS.*

WE WANT YOUR BUSINESS
SHIPMENTS MADE FROM
MILLS LOCATED IN THE
NORTH
EAST
SOUTH AND
WEST.

*YOUR NEXT ORDER WITH
"BELL-IN THE BUSINESS 50 YEARS."*

THE EDWIN BELL CO. PITTSBURG, PA.



Red, Brown,
Buff and Black
**MORTAR
COLORS**

The Strongest and Most Economical in the Market.

Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO., CHATTANOOGA, TENNESSEE.



**ASH GROVE
WHITE LIME ASSOCIATION**
MANUFACTURERS OF
**High Grade
White Lime.**
KANSAS CITY, MISSOURI.

OZARK COOPERAGE CO.

MANUFACTURERS OF

Lime, Cement and Salt Cooperage Stock.

We are specialists and can supply your wants promptly.

Frisco Building,

ST. LOUIS, MO.

H. ACKERMAN, President.

L. V. UNCAPHER, Secretary.

J. W. THEW, Treasurer.

The Central Ohio Lime and Stone Co., of Marion, Ohio.

Capital \$150,000.

We own One Hundred and Seventy Acres of the best and choicest lime and stone land in Central Ohio. The plant is located north of the city on the Pennsylvania R. R. We are now operating our plant with a large force of the most experienced men that can be found anywhere.

We produce and have the statements to show that we have the best white lime that is on the market. Our furnace stone is pronounced by experts and consumers to be the best they have ever used.

Our kilns and crusher plant are now in full operation and we solicit your patronage. We guarantee our product to be as good as the best, give us a trial order and be convinced of our statement. All orders placed with us will receive prompt attention.

THE CENTRAL OHIO LIME AND STONE CO.

N. LAPHAM CO.,

Rooms 1529, 1530, 1531 and 1532, 150 Nassau St., NEW YORK, N. Y.

SLACK COOPERAGE STOCK.

CEMENT AND LIME STOCK
A SPECIALTY.

MILLS: New York, Ohio, Kentucky, Virginia, Pennsylvania, Michigan, Tennessee and North Carolina.

Tell 'em you saw it in ROCK PRODUCTS.

Louisville Hydraulic Cement

Thirty million barrels used in important construction west of the Alleghenies.

Thorough reliability demonstrated by over seventy years' continuous use, most of the bridges, sewers and public works having been built with Louisville Cement.



Louisville Cement with two parts sand makes mortar as strong, after six months, as mortar made of Portland Cement with four parts sand.

The best work is the kind that accomplishes all the objects sought at least expense.

Illustrated Pamphlets Mailed on Application.

Western Cement Co.
281 W. Main St. Louisville, Ky.

Buckeye Portland Cement Co.

ESTABLISHED 1888.

Manufacturers of the celebrated
"Buckeye" brand of

Portland Cement

"Buckeye" has stood the wear and tear in many important places for the past fifteen years and under the new process of manufacture is now better than ever :: :: :

WE INVITE YOUR
CORRESPONDENCE.

Bellefontaine, Ohio.

The Best Portland Cement Is

"LEHIGH"

MANUFACTURED BY

**Lehigh Portland
Cement Co.**

ALLENTOWN, PA.

Write for Catalogue.

Capacity, 4,000,000 Yearly.



LIMOID
SEWER PIPE
FIRE BRICK
PLASTER, ETC.



Charles Warner Company



LAND TITLE BUILDING,
PHILADELPHIA.

WILMINGTON,
DELAWARE.



BANNER CEMENT CO.,
MAKERS OF THE FAMOUS BANNER BRAND OF
LOUISVILLE CEMENT.

Guaranteed that 90 per cent. will pass a
ten thousand Mesh Sieve.

WE SELL TO DEALERS ONLY.

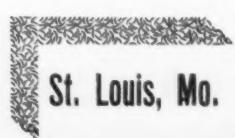
GENERAL OFFICE: MASONIC TEMPLE,

CHICAGO, ILL.

CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner
Brand Louisville Cement,
Portland Cements and
Building Materials.



Tell 'em you saw it in ROCK PRODUCTS.

THE OMEGA PORTLAND CEMENT CO.

F. M. STEWART, President.
ISRAEL WICKES, Vice President.
GEO. H. SHARP, Superintendent.
HOMER C. LASH, Chemist.
CHAS. F. WADE, Sec'y-Treas.



JONESVILLE, MICHIGAN.

Chicago Portland Cement Co.



MANUFACTURER OF . . .

"CHICAGO AA"
PORTLAND CEMENT.

We make one brand only.

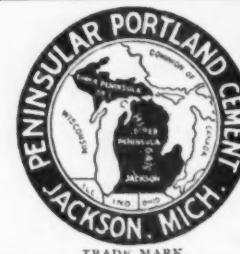
The best that can be made.

Elk Portland Cement



is made from LIME-ROCK AND SHALE. It is always uniform and is unexcelled for every kind of work for which cement is used. Write us for prices

Elk Portland Cement & Lime Co.
PETOSKEY, MICH.



PENINSULAR PORTLAND CEMENT CO.

MANUFACTURERS OF

High Grade Portland Cement

GENERAL OFFICE:

JACKSON, - - - MICHIGAN

Newaygo Portland Cement Co.

Sales Office: Michigan Trust Building,

GRAND RAPIDS, MICH.

Write us for prices.

Send us your orders.

E. C. EWEN, President,
Saginaw, Michigan.

F. KOMNICK, Vice-Pres.,
Elbing, Germany.

J. L. JACKSON, Sec. and Treas.,
Saginaw, Michigan.

The American Sandstone Brick Machinery Co.

.....MANUFACTURERS OF.....

The Komnick System Sandstone Brick Machinery.

52 Plants running in Europe and 9 plants running in the United States, others being installed in both countries.



Every part made in our own works and thoroughly tested before leaving our hands.

Factory and Office:

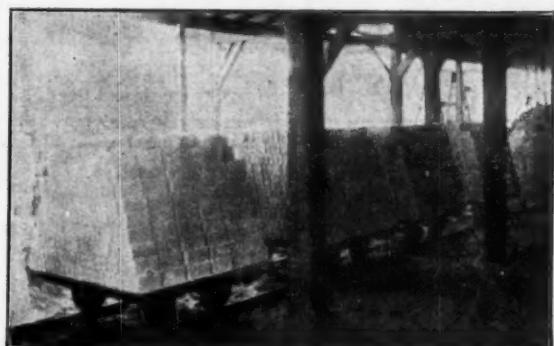
SAGINAW W. S., MICH.

Schwarz System Brick Co.

8-10 Bridge Street,
NEW YORK.

SAND-LIME BRICK

Engineers and Builders of
SPECIAL MACHINERY
for the Sand-Lime Brick Industry.



Factories erected, equipped and put in running order under full guarantee.

We invite inspection of our plants.

ST. LOUIS EXHIBIT, MINES & METALLURGY BLDG., BLOCK 20-C.

NEW ERA CEMENT ROOF TILING

The Best Roofing Material in the World. The Most Profitable Enterprise of the Day.

INEXPENSIVE. They cost less than wooden shingles and half the price of slate.
EVERLASTING. The material improves with age and is indestructible, two parts of sharp sand and one part of Portland Cement being used.

HANDSOME. Can be made in all desirable colors which cannot fade and never need painting.

FIRE, DUST AND WATERPROOF. Fire has no effect on them; dust, rain or soot cannot find their way through this roof, as the tiles are double interlocking and form an impregnable sheet of cement.

STORMPROOF. Fastened by wire clasps from the inside, no storm can raise them
NO SKILLED LABOR required to lay this roof, no nails or tools used. Common sense and common bands the only requirement.

NO ROOF BOARDS necessary, strips 1x3 inches placed 8½ inches apart do the business.

NO HEAVY ROOF CONSTRUCTION needed, as they weigh 150 lbs. less per square than slate.

OUR PATENTS cover the United States and Canada. We will dispose of them for any State, County or City. We manufacture our own machines and guarantee them.

SECURE YOUR TERRITORY IN TIME.

For further information write to

DETROIT CEMENT TILE CO.
613-619 FORT ST. WEST.
DETROIT, MICH.

Tell 'em you saw it in ROCK PRODUCTS.

Miles Concrete Building Block Machine.

Patented Sept. 15, 1903. Other patents pending.

Moulds blocks face down. Special designs made to order in all shapes and sizes. Hard face, square edge, clear cut, any color, waterproof, fire-proof, frost-proof, warm in winter, cool in summer. More durable and less expensive than brick or natural stone. Cores interchangeable. Excels all others in ease and convenience of operation, quality and uniformity of blocks produced. Equals in any variety of shapes. A complete machine for contractors.



MILES CONCRETE BUILDING BLOCK MACHINE CO.

145 West Pearl St., JACKSON, MICHIGAN.

BOTH PHONES 653.

WOOD PLASTER

The Coming Wall Covering

WE ARE THE ORIGINATORS.

After several years of experimental work we have reached **SUCCESS** and our goods are recognized as of the highest quality.

We wish to establish our trade in every important market, and will give local capital and local talent an opportunity to go in with us in the erection and operation of

MIXING PLANTS

Using our IMPROVED MACHINERY and FORMULAS. The management of the local plant to remain with LOCAL INTERESTS. Write us for full information.

The ELYRIA WOOD PLASTER CO., Elyria, Ohio.

"DOING THINGS."

machines are now being used with success in this country. We offer machines with or without territory on reasonable terms. A **perpetual injunction** has been granted us by the U. S. court against a user of an infringing machine. Other suits at law now pending. Write us for **free** catalogue. One dollar for a beautiful album of fifty-five structures, some of the finest buildings in the country.

THE HARMON S. PALMER BUILDING BLOCK CO., Washington, D. C.



THE AMERICAN HYDRAULIC STONE CO. Century Bldg., Denver, Col.

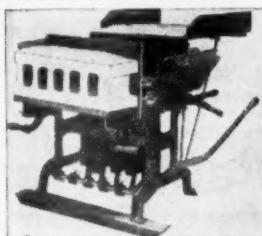
REVOLUTION IN BUILDING. Fire Proof Buildings with **HOLLOW CONCRETE WALLS.**

That will last for all time. You furnish seven parts of sand and gravel (or broken stone), one part cement, seven men (six unskilled) and we do the rest. Making by hand labor 1,000 square feet of Fire-proof wall in a 10 hour day. Ready for laying in 10 days. No burning—simply turn on the hose. No power necessary. Reward for proof of infringement. Patent Guaranteed.

The Simplicity Building Block Machine

For the manufacturer of hollow or solid concrete building blocks. Adjustable for all sizes and shapes. Delivers the block on its side, a saving of labor. Wood pellets are used, other machines use iron pellets, a full set of which cost as much or more than price asked for our complete machine. CONSIDER WELL BEFORE PURCHASING. Agents wanted in every State.

THE STANDARD SAND & MACHINE COMPANY
CLEVELAND, OHIO.



"THE SIMPLICITY."

Manufacturers of Mixers, Screens, Dryers, Conveyors, Etc., for equipping Building Block and Wall Plaster Plants. Ask for catalogue and prices.

The Franklin Printing Co.,

Incorporated.

430 West Main Street,

LOUISVILLE, KY.

INQUIRIES RECEIVE PROMPT ATTENTION.

WESTERN LIME & CEMENT CO., MILWAUKEE, WIS.

Largest Manufacturers of Magnesian White Lime in the United States.
Daily capacity, 10,000 Bbls.

Exclusive Northwestern Distributing Agents.

For all the best Lehigh Valley, Pennsylvania, Brands of Portland Cements
Direct Importers of German Portlands.
Leading Shippers Throughout the Northwest, of Mason's Building
Materials in General.

HIGH GRADE FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and
Iron Works of every description :: :: :: ::

Louisville Fire Brick Works,

K. B. GRAHN, Prop.,
Highland Park, Ky. P.O.

Sand-Lime Brick



The Best Money Maker In This Country To-day

Plants installed complete on the AMERICAN SYSTEM equipped with AMERICAN MACHINERY, started and operated until 100,000 brick are made. Quality Guaranteed. No Failures. No Experimenting. No Royalties. No Secrets. No Chemicals. Send for Free Booklet.

AMERICAN SAND-LIME BRICK CO.

GREAT NORTHERN BUILDING, CHICAGO, ILL.

NEW YORK OFFICE; 39 Cortlandt St. SOUTHERN OFFICE; City Bank and Trust Co. Bldg., Mobile, Ala. SAN FRANCISCO OFFICE; 501 Rialto Bldg.

Tell 'em you saw it in ROCK PRODUCTS.



Others are discarding their old methods and installing the Hercules. They are doing it, because it pays them to do it. If it pays them, it will pay you.

Stop experimenting—let us put you on the road to success. Our proposition is a liberal one; yes, more liberal than made by any firm in this country.

Write to-day for Catalogue L, it will tell you all about it.

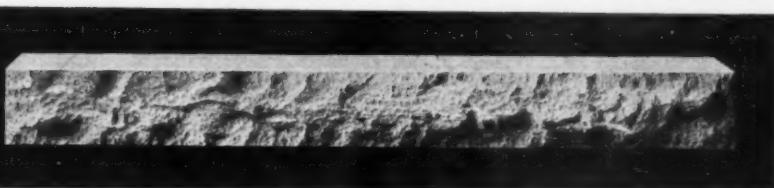
Compare ours with others

PROFITS IS THE RULE BY WHICH YOU MEASURE—COMPARE

The Hercules Cement Stone Machine

With others. There are good reasons for better results from the Hercules method, which are:

Saving in Material. Saving in Labor. Makes Stone that's Stronger. Makes more Sizes and Designs of Stone than any Machine in the World. Makes Stone that's Impervious to Moisture. It makes in addition to Hollow Blocks, Water Table, Window Sills, Lintels, Coping, Steps, etc., up to five feet long—all on the one Machine.

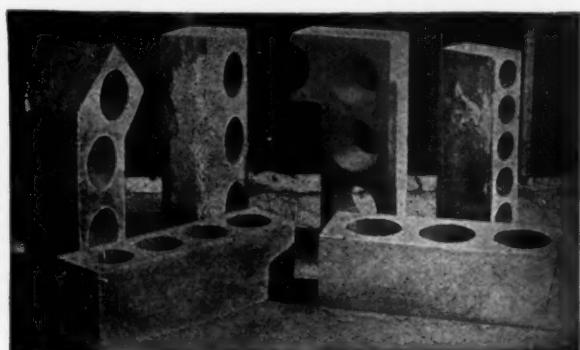


THE CENTURY CEMENT MACHINE CO., 179 West Main St., ROCHESTER, N. Y.

STONE CHEAPER THAN BRICK.

Made under the new method without tamping or pressure on our machine which costs but

\$50.00



We Make Seven Stones

in one operation 2 ft. 6 in. x 9 in. x 10 in. No experiment; our work can be seen in thousands of buildings. Send for detailed information.

STEVENS CAST STONE CO.,

808 Chamber of Commerce, CHICAGO, ILL.



The stones for this arch were made, cured and laid up and the structure turned over and accepted all in two weeks after the contract was signed. Messrs. Cutshall & Flagg, of Brazil, Ind., were the stone manufacturers and contractors and it is needless to say that

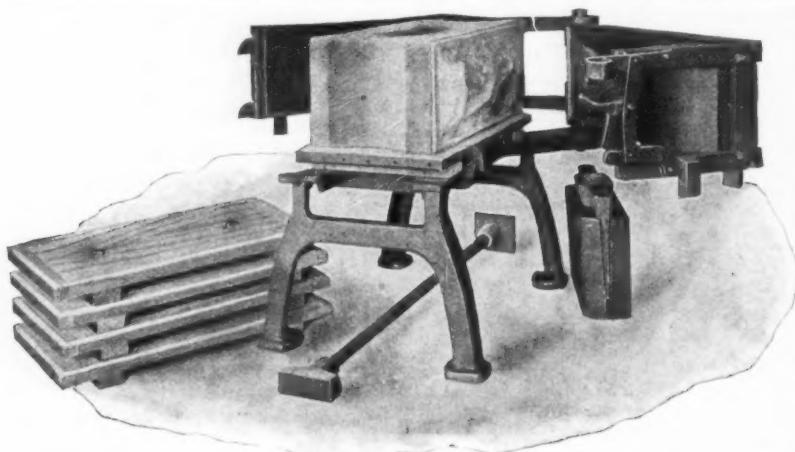
Pettyjohn's Hollow Concrete Block Machine

was used as it would have been impossible with any other machine. Write for catalog.

PETTYJOHN BROS.,

1314 N. First Street,

TERRE HAUTE, IND.



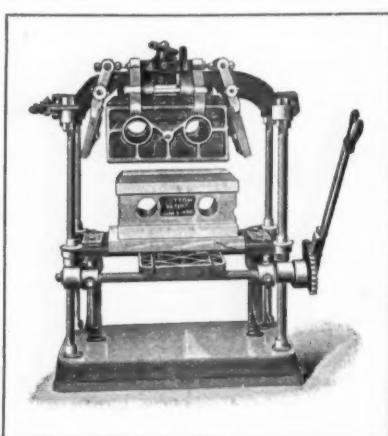
MILLER & HUNTINGTON,

129 S. Hill Street, JACKSON, MICH.

Snap Cement Building Block Machine

Collapsible core; machine swings clear of block, making it easily removed. Boards having cleats prevent cracking, rock faced or natural stone, easily changed.

CATALOGUE ON APPLICATION.



The Cottom Artificial Stone Blocks made on the

"Cottom Machine"

Are Superior to All Others.

They are laid in the wall by pouring semi-liquid cement into and between them, the process being covered by patent, making A PERFECT WALL. For information address, :: :: ::

J. B. COTTOM, Manager, 46 Callahan Bank Bldg. Dayton, Ohio.

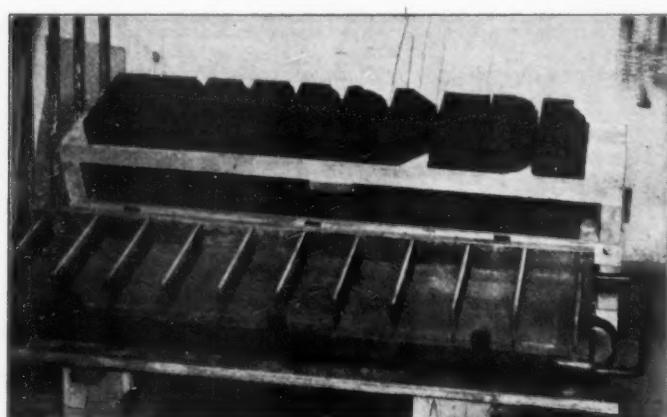
Our Machines are Simple, Complete, Inexpensive, Reliable.
Either Hollow or Solid Concrete Blocks

One Machine in a Section Means Many More Soon.

HERE IS A RECORD HARD TO BEAT—Out of 2,300 blocks in one run only ten were broken or imperfect. No dough-faced blocks produced, but a sharp rock face, rivaling granite or limestone for sharpness. We court comparison of our rock-faced block with anything in the United States. Price within the reach of all.

You can build your own house with our Machines and save money, even if you throw the molds away afterwards. Write For Particulars.

MICHIGAN CEMENT BLOCK MACHINERY COMPANY,
UNION CITY, MICHIGAN.



Here is what you have been looking for!

Cement or Lime Brick Machine

Makes 10 perfect brick per minute with two unskilled workmen.

Be your own brickmaker.

Can be changed from plain to ornamental brick or vice versa with no loss of time or extra expense.

E. W. SEAMANS,

97 Ottawa Street,

GRAND RAPIDS, MICH.

Tell 'em you saw it in ROCK PRODUCTS.

Companies Organized and SYSTEMS INSTALLED with the most modern EQUIPMENT.

STANTON SYSTEM CONCRETE SAND-LIME BRICK.

Comprising the entire line of COMPOSITION MATERIALS.

240 Housman Bldg., Active Operations, 150 Nassau St.,
GRAND RAPIDS, MICH. Laboratory and Present Address
11 Lorraine Block, NEW YORK CITY.

SCHENECTADY, N. Y.

My COMPANIES manufacture Concrete Stone, moulded and cast, hollow and solid; ornamental designs and trimmings; Key-stones and Arches; Window Heads and Sills, Etc. MONOLITHIC CONSTRUCTION. Foundations, Bridges, Sub-ways, Sea-walls, Retaining-walls, Watertight Cellars, Silos and Stables, Sidewalks and Curbs; also face, medium and common Brick.

ELMER E. STANTON,
Originator and Sole Owner.

Concrete Engineering Experts, Inspectors and Directors of Operations Furnished.

**ALLEGHENY QUARRIES
LANCASTER, OHIO.**

**Rough, Cut and Sawed Sand Stone.
RAILROAD BRIDGE STONE A SPECIALTY.**

SAND

Crushed Sand Stone for Concrete.
Sand, 98 per cent. Silica, suitable for core work, Iron and Steel work, Cement Block and Mortar. Also Fire Sand.

**G. S. FRAMBES, Successor to F. C. NEEB.
ESTIMATES FURNISHED.**



Mica Schist or Fire Stone Linings

—FOR—
Lime Kilns, Bessemer Converters and Cupolas, Etc.

Use in place of Fire Brick. It lasts longer and costs less. It covers irregular shapes and looks like ordinary Building Stone. Any mason can lay it. The small chips can be used in making the Mully for laying. Quarry at Glenside, Pa. Philadelphia & Reading Railroad.

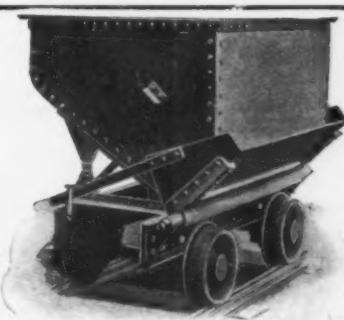
J. W. PAXSON CO., PHILADELPHIA, PA.



No. 52. Trunion Side Dump Car.



No. 10. Heavy Flat Car for Stone Mills.



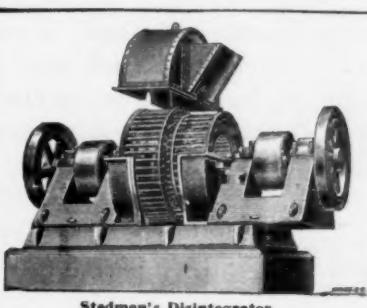
No. 521. One Side Dump Car.

THE CLEVELAND CAR CO.

WEST PARK, (P. O.) OHIO.

MANUFACTURERS AND BUILDERS OF

Steel Cars and Industrial Railway Equipment. Turntables, Switches, Crossings, Portable Track, Etc.
COMPLETE ESTIMATES FURNISHED.



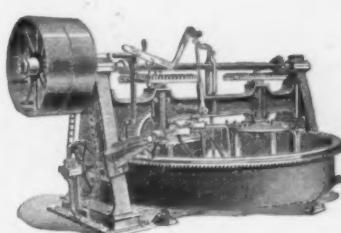
Stedman's Disintegrator.

OUR Disintegrators

grind Lime, Hydrated Lime and Gypsum,
Fertilizer, Coal and Clay.

Our Mixers are well ADAPTED to both WET and DRY mixing, wet or dry breaking of lime. A fine mixer for mortar and plaster. An ideal fertilizer mixer.

The STEDMAN FOUNDRY & MACHINE WORKS,
AURORA, INDIANA.



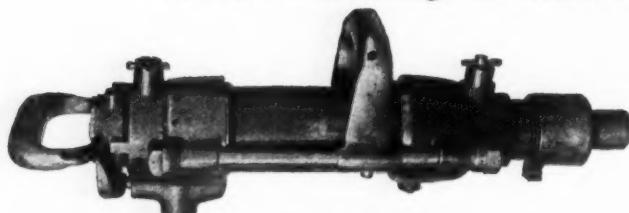
Stedman's Double Mixer.

"Rock Products" Does Things for Advertisers. Ask them.

Tell 'em you saw it in ROCK PRODUCTS.

CHICAGO PNEUMATIC TOOL CO.

Fisher Building, CHICAGO. 95 Liberty St., NEW YORK.



IMPROVED CHICAGO ROCK DRILL.

Weight of Drill	25 lbs.
Diameter of Piston	1 1/2 in.
Length of Stroke	2 1/2 in.
Free Air Consumption	30 cu. ft. per min.
Diameter Hole will Drill	1 in.
Depth	24 in.

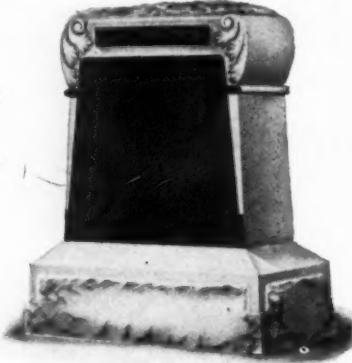
Machine illustrated is adapted to plug and feather work. We also manufacture other styles of Pneumatic Drills with automatic or hand rotating devices, as well as a general line of stone tools.

Complete Plants Installed Under Liberal Guarantee.

INQUIRIES SOLICITED.

We are making a run on our No. 5 and No. 6 two-piece jobs. Send for prices. Also would be glad to quote prices on any work you may have to buy.

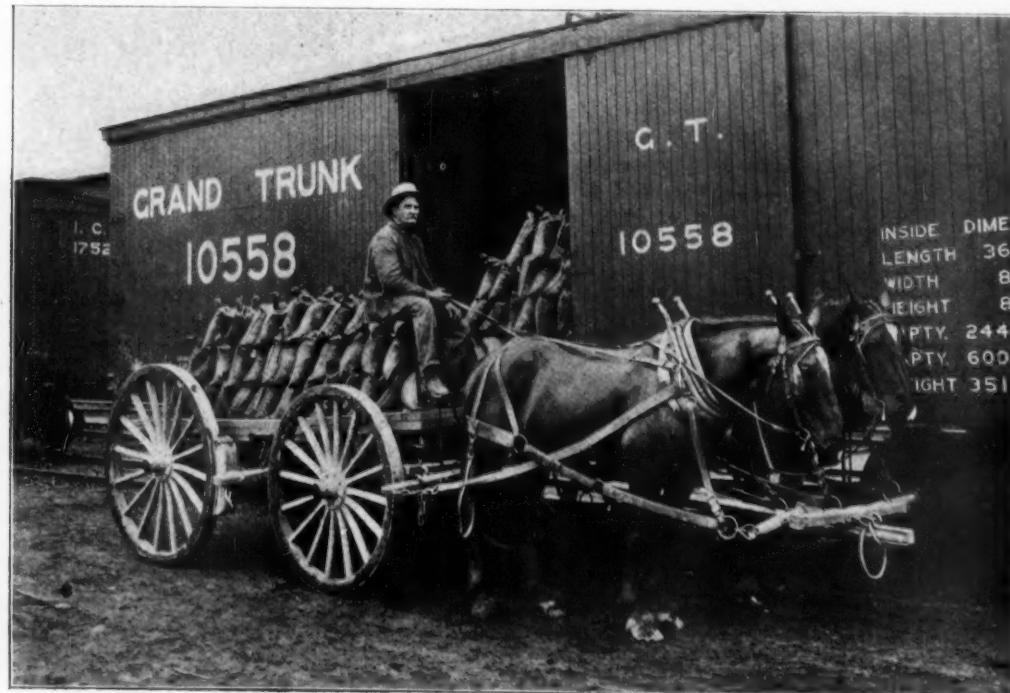
We Manufacture a high class of work from the Best Barre Granites.



We Are Equipped for Convenience and can save you money.

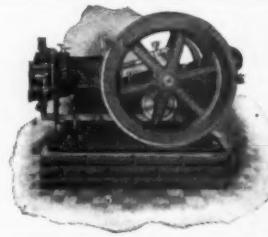
Polished work our Specialty.

J. A. MARTINSON & CO., BARRE, VERMONT.

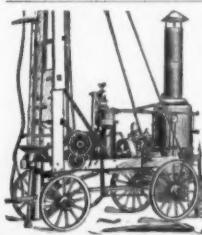


THERE are other gasoline engines, but none that start so quickly and use so little gasoline as the ALAMO. No small triggers or springs to get out of adjustment or give trouble. Perfectly built. An igniter that always ignites. Works as well in January as July. Price reasonable. Write for beautiful catalogue.

The Alamo Manufacturing Co., HILLSDALE, MICHIGAN.



W. L. BEAL L. C. BEAL J. W. BEAL
MANUFACTURERS OF BEAL PATENT CORE DRILLS



Does the work without the use of Diamond. Core Drills made to order. Contractors for prospecting and drilling wells to develop minerals and sand cores taken out at all lengths from 3 inches to 10 feet long, 3, 4 and 5 inches in diameter. Gold, Silver, Zinc, Lead, Coal, Clay, Gypsum, Marble, Granite, Sand, Lime-Rock. No guesswork, for drilling wells it has no equal. Cheap to operate. Address all communications to BEAL BROS., Elyria, Ohio.

FINEST GRADE OF

IMPORTED SCOTCH POLISHING SHOT

Each bag containing 112 lbs. is made from the best raw material and there is more of this shot now used in granite and stone centers than any other shot in the market. It is especially adapted for sawing, polishing or rubbing granite, marble and stone. If you have not given us a trial, send in your order for a trial, to convince you it is the best you have ever used.

SCOTT & TOWNSEND,
BARRE, VERMONT.

WHOLESALE FOREIGN and DOMESTIC GRANITES

Tell 'em you saw it in ROCK PRODUCTS.

1826 The Granite Railway Co. 1903
 SOLE PRODUCERS OF THE FAMOUS
Dark Blue "RAILWAY" Granite
 MONUMENTAL and BUILDING WORK of all KINDS,
 Our Specialty—FINE POLISHING—PROMPT SHIPMENTS.
 BATES AVENUE,
 Trains from track 21, South Station, Boston, at 16 minutes past each hour of the day.
 WEST QUINCY, MASS.

T. F. MANNEX,
 PROPRIETOR OF THE FAMOUS
A. Reinharter Extra Dark Quincy Granite Quarry.
 Rough Stock for sale to the trade, also finished
 monuments, and every description of cemetery
 work. & Rolls, Columns, Balls, Vases, Round
 Monuments, Balusters, etc. Turned and Polished.
 T. F. MANNEX,
 West Quincy, Mass.

Monuments and Monumental Stock



Rough Stock, Polished Stock, Hammered Stock or Finished Jobs. &c. &c.

We operate our own quarries and have every modern facility for the handling of this work and guarantee prompt service. Get a sample of our Iron Absorbent for removing stains from granite.

MAGUIRE & O'HERON
 East Milton, - Mass.

JOSEPH BISHOP
 Manufacturer and Wholesale Dealer in
Quincy Granite Monuments
 From Best Light and Dark Stock
 INTERVALE STREET
 QUINCY, —————— MASS.

There is a book that is not for sale, but may be rented a year for \$5.00, that tells about—

Granite Prices.

It is the official price list of the Barre Granite Manufacturers' Association, which gives price pointers for any and all kinds of Granite work. Address THE FRANCIS PUBLISHING CO., 431 West Main Street, Louisville, Ky

The Pirie Tool Sharpening Machine is now on the Market.

Its capacity is 75 men, but it can be profitably used where 50 cutters are employed within a radius of one mile. For full particulars, write or inquire

PIRIE TOOL SHARPENING MACHINE CO.
 MONTPELIER, VERMONT.

J. K. PIRIE

Proprietor of the Quarry formerly known as

THE WELLS. LAMSON & CO., DARK QUARRY, Graniteville, Vt.

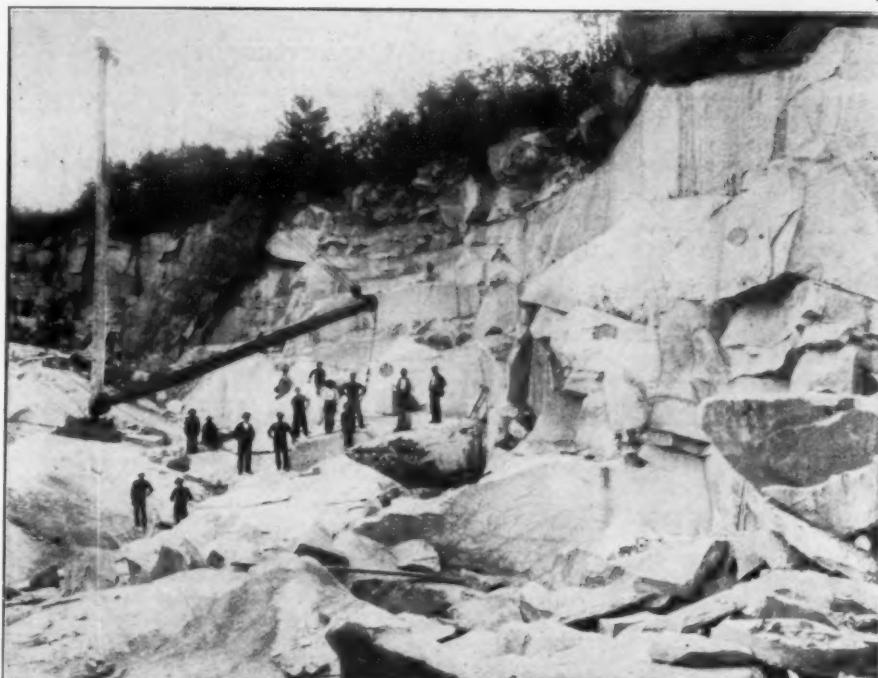
I have been in the company known as Wells, Lamson & Co. for 21 years and had the personal supervision of this quarry during that period.



Rough stock furnished to the limit of transportation

Stock squared and polished for the trade.

Only five quarries in Barre producing dark granite and mine is second to none.



Among the important contracts for which the Granite was supplied from my quarry, are the following:

Broom County Soldiers and Sailors Monument, erected at Binghamton, N. Y.

Soldiers and Sailors Monument, erected at Kokomo, Ind.

Soldiers Monument, at Wellsboro, Pa.

Polished Columns and Carved Capitals for Mausoleum, erected by John L. Flood, at San Francisco, Cal.

Monument erected to Hon. A. B. Martin, at Lynn, Mass. One of the finest private monuments in New England.

Tell 'em you saw it in ROCK PRODUCTS.

BARRE GRANITE QUARRY MEN AND MANUFACTURERS.

JOHN E. SMITH.

ESTABLISHED 1868.

DONALD SMITH.

E. L. SMITH & CO., QUARRY OWNERS AND WHOLESALE DEALERS IN Light, Medium and Dark Barre Granite.
MONUMENTS AND VAULTS.

Rough Stock of any dimensions to the limit of transportation promptly furnished at all seasons.

Quarries and Works at BARRE, VT.

John E. Smith.
Donald Smith.N. D. Phelps,
Mgr.John Trow.
H. A. Phelps.**Barre White Granite Co.,**

Successors to WHEATON QUARRIES.

White GraniteFOR MONUMENTAL WORK,
CURBING AND PAVING.

Write For Quotations.

BARRE, VERMONT.

MATT HALEY,
BARRE, VT.

We build and furnish all modern improved derricks and cableways for quarries and contractors work.

BARRE GRANITE?

Well, that is just what we manufacture and if you want it just send us a sketch of the work you need and we will gladly furnish you estimates.

J. O. BILODEAU Monumental Work,
BARRE, VT.**Granite City Polishing Machine.**Power Hoist with ball bearing, Rope Buffers and Scroll Wheels, Air Compressors and Automatic Tools. New and Second-hand Engines, Boilers, etc.
WRITE FOR WANTS.**W. A. LANE,**
BARRE, VERMONT.

C. W. McMILLAN. C. W. McMILLAN, JR.

G. W. McMILLAN & SON,

SUCCESSORS TO MCMLLAN & STEPHENS.

ESTABLISHED 1888.

Manufacturers of Light, Medium and Dark

BARRE GRANITE
AND ALL KINDS AND SIZES OF CEMETERY WORK.

Dies, Caps and Bases Squared and Polished for the Trade.

BARRE, VERMONT.

ROBINS BROTHERS,MANUFACTURERS
OF ALL KINDS OFCemetery Work from Barre Granite
BARRE, VT.**ROCK PRODUCTS**

ONE YEAR

One Dollar.

**14,000 CUBIC FEET VERMONT MARBLE
IN THE BLOCK.**

Light and dark, clouded and white, can be bought at a BARGAIN.

Estate of GEO. E. ROYCE, Rutland, Vt.

MIRROR PHOTOGRAPHY.

Satisfaction guaranteed in Granite Monumental designs. Give us a trial.

FRED C. EATON, - - - Barre, Vt.

D. H. McLEOD, Manager. Established 1884.

Working for the trade only.

EMSLIE, McLEOD & CO.

Granite Manufacturers and Quarriers, BARRE, VT.

A detailed acceptance is given for every order that is placed with us, and customers are advised from time to time how their work is progressing. Let us hear from you when in the market for Barre granite.

Anderson's Patent Power Traveling Crane

is a necessity in every well-equipped, up-to-date, granite-cutting plant. It saves time, saves loss by breaking and chipping, facilitates the execution of orders and increases the profit account by reducing expense. We make them up to 40-ton capacity. We are prepared to furnish plans and working drawings for the most up-to-date stone sheds, and to furnish all Shafting, Pulleys, Hangers, Countershafts, etc., for their Complete Equipment.

MANUFACTURED BY THE

LANE MANUFACTURING CO., Montpelier, Vt.

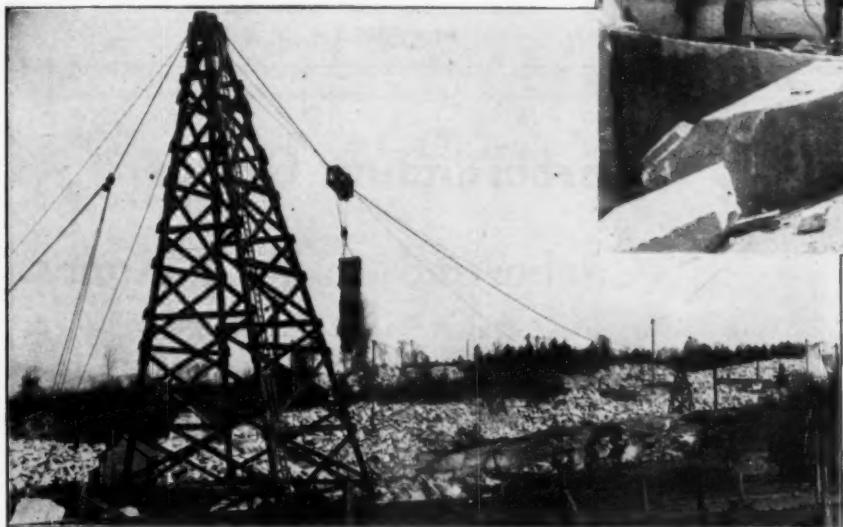
Let us have your contract for advertising space, beginning with the October issue.

Tell 'em you saw it in ROCK PRODUCTS.

Mc DONALD, CUTLER & CO., Barre, Vermont.

Quarry Owners and Manufacturers of

**Monuments, Mausoleums
AND BUILDING WORK**



WE CAN FURNISH

Light and Dark Medium Granite

Orders For The Trade Solicited.

The Langefeld Granite Co.

**Dimension, Building Stock
and Underpinning.**

Cross-Walk Stone, Curbstone and
Paving Blocks Constantly on Hand.

THE BEST
WHITE BARRE GRANITE
From Our Own Quarry.

The Langefeld Granite Co.

AUG. J. LANGEFELD, Manager.

BARRE, VT.

WOODBURY GRANITE CO.



We make a specialty of rough stock orders and of finished vaults. Try us, we can give you prompt delivery.

Two shades—Woodbury Gray and Hardwick White—the whitest granite known.

WOODBURY GRANITE CO.,

HARDWICK,

VERMONT.

Tell 'em you saw it in ROCK PRODUCTS.

A. ANDERSON & SONS,
Quarriers and Manufacturers of
Barre Granite.
ALL WORK GUARANTEED FIRST-CLASS.

BARRE, VERMONT.

The Granite Construction Company
BARRE, VT.

Manufacturers of Granite for Building Purposes

BUILDING WORK MAUSOLEUM WORK STREET WORK
DIMENSION STONE PAVING BLOCKS CRUSHED STONE

THE ROGERS GRANITE CO.

Vault Work and Monumental Work
Manufactured from best Barre Granite.

Estimates cheerfully furnished on all classes of Work.

P. J. ROGERS, Manager.

Barre, Vermont.

ONLY A STEAM PIPE



needed for the
PULSOMETER STEAM PUMP

No engine, belt, oil, packing, nor special foundation required, just a steam connection with boiler.
No easily deranged inside or outside mechanism.
Handles gritty, muddy water without injury resulting.

WRITE FOR CATALOGUE.

THE PULSOMETER STEAM PUMP CO.,
1708 Whitehall Building, NEW YORK.

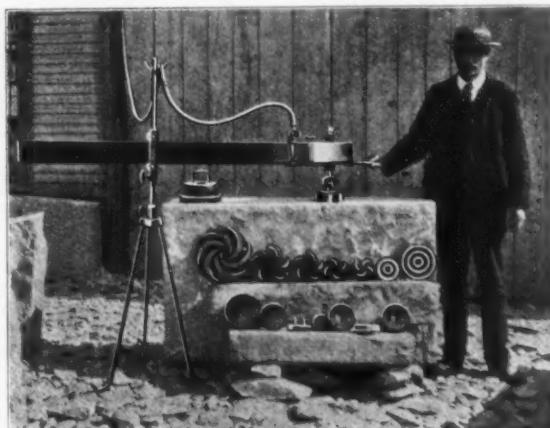
THE CAVICCHI
Pneumatic Polishing Machine
PATENTED FEB. 4, 1902.

It has given satisfaction wherever tried.

No up-to-date dealer can afford to be without this machine.

Write for prices and descriptive catalogue to the manufacturer.

E. CAVICCHI, Barre, Vt.



RED HILL GRANITE

Nothing else just like it. A beautiful blend of three colors.

Takes a high polish and is well suited for monumental work.

Rough base and building stock furnished at low prices.

Its color and grain make it a favorite with architects.

If you do not know the stone write for sample and prices.

MACHIAS GRANITE CO.
MACHIAS, MAINE.

Carborundum Grains

Carborundum Rub Stones

David Mowat's Steel Shot

Marvelous Putty Powder



R. C. BOWERS
GRANITE CO.

MONTPELIER, - VERMONT

“BIG FOUR”

THE BEST LINE TO
INDIANAPOLIS, PEORIA,
CHICAGO,
And all Points in Indiana and Michigan.

CLEVELAND, BUFFALO,
NEW YORK, BOSTON,
AND ALL POINTS EAST.

Information cheerfully furnished on application at City Ticket Office,
“Big Four Route,” No. 259 Fourth Avenue, or write to S. J. GATES,
Gen'l. Agt., LOUISVILLE, KY.

WATCH THIS SPACE FOR

J. M. BOUTWELL.

Quarries at BARRE,
Office at MONTPELIER, VT.

Best Dark Barre Granite IN ROUGH STOCK

THIS SPACE RESERVED FOR

WETMORE & MORSE GRANITE CO.

Finest Light and Medium

GRANITE

Monumental or Building Work

Stock For Large Work A Specialty.

Any Dimensions Furnished to Limit of Transportation.

Office at MONTPELIER, VT.

Quarries at BARRE.



LEVIATHAN BELTING

For Heavy Service and rough usage.

Designed and constructed to meet the requirements of heavy machinery—Stone and Cement Mills, Rock Crushers, etc.—and for handling rough materials of all kinds, wet or dry.

Endorsed by the highest scientific authorities for this class of work.

CATALOGUES, PRICES AND SAMPLES AT YOUR REQUEST.

LARGE STOCKS FOR IMMEDIATE SHIPMENT.

MAIN BELTING COMPANY, Manufacturers.

55-57 Market Street, CHICAGO, ILL.

PHILADELPHIA, 1219 Carpenter St.

BOSTON, 120 Pearl St.

BUFFALO, 40 Pearl St.



Limestone Tools

SPECIAL PRICES ON

**Bush Hammers, Tooth Axes,
Hammer Head Tools.**

Send for Special Rock Products Offer.

W. H. ANDERSON & SONS,
INCORPORATED.

TOOL MANUFACTURERS.

27 St. Aubin Avenue, Detroit, Mich.



Poultney, Vt.

KOMINUTERS For Granulating
TUBEMILLS For Pulverizing

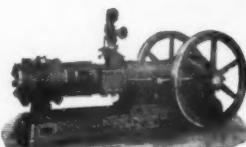
Grinding SIXTY MILLION Bbls. of Cement Annually.

MOST Modern, Efficient, Economical.

F. L. SMITH & COMPANY
ENGINEERS

39-41 Cortlandt Street, NEW YORK.

THE BLAISDELL AIR COMPRESSORS



ARE IDEAL FOR QUARRY WORK.

Self-Oiling Dust Proof Substantial

SEND FOR CATALOGUE.

THE BLAISDELL MACHINERY CO.

BRADFORD, PA.

AUSTIN MANUFACTURING COMPANY

NEW YORK OFFICE: PARK ROW BLDG.

ATLANTA OFFICE: PRUDENTIAL BLDG.

ST. LOUIS OFFICE: HOUSER BLDG.

CHICAGO, ILL., U. S. A.

Builders of Complete

ROCK AND ORE CRUSHING PLANTS

Revolving Screens, Elevators, Dump Cars, Etc.

COMPARED WITH OTHERS THE AUSTIN IS MORE DURABLE

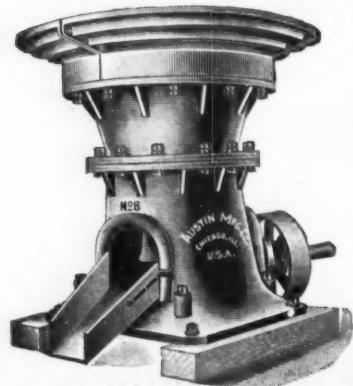
Has greater capacity per horse power, easier adjustments, stronger parts, is of more scientific design, and is the only automatically lubricated crusher on the market.

Discriminating Engineers invariably admit that the **AUSTIN GYRATORY CRUSHERS** embody improvements which overcome the faults of other crushers that have aggravated owners and operators for years.

CAPACITIES RANGING FROM 40 TO 2,000 TONS DAILY. BUILT IN NINE SIZES.

Hundreds of Austin Crushers in Use in All Parts of the World.

Tell 'em you saw it in ROCK PRODUCTS.



Gypsum Machinery

A fine and complete line of Modern Machinery.

KETTLES, CRUSHERS, NIPPERS, ETC.

We are now building the new Plymouth Mill at Fort Dodge, Iowa, the finest mill in the United States.
ASK FOR CATALOGUE.

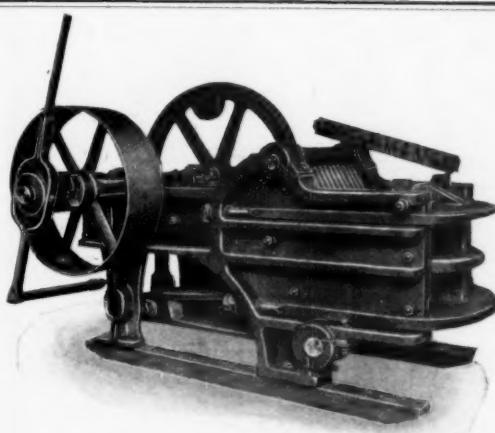
**Des Moines Manufacturing and Supply Company
DES MOINES, IOWA.**

CRUSHERS

for soft and medium hard rocks

GYPSUM MACHINERY.

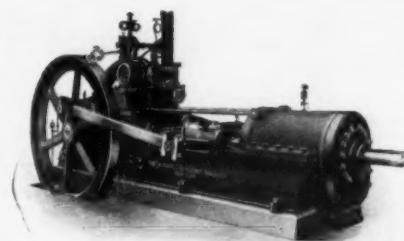
We make a complete line, including Calcining Kettles, Nippers, Crackers, Screens, Reels, etc. We also design Plaster Mills and furnish all necessary Machinery.



BUTTERWORTH & LOWE,

17 Huron Street, GRAND RAPIDS, MICH.

This illustration shows our Class "A" Air Compressor. A steam driven type. We have built and sold over 3000 of this style of compressor.



AIR COMPRESSORS

For Mining, Quarrying and Tunneling

COMPLETE EQUIPMENTS FURNISHED

Coal Cutters

Pneumatic Tools

Pohle Air Lift

CLEVELAND, O.
CHICAGO, ILL.
ST. LOUIS, MO.

THE INGERSOLL-SERGEANT DRILL CO.

26 Cortlandt Street, NEW YORK.

PHILADELPHIA, PA.
PITTSBURG, PA.
BOSTON, MASS.

Saw Blades

Carefully Straightened and Cut Square and True. Ordinary Sizes Constantly on Hand.

WEST LEECHBURG STEEL CO.
PITTSBURG, PENNSYLVANIA.

"HAWK" Brand

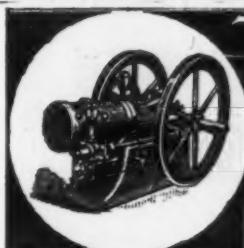
STEEL for
POINTS,
CHISELS,
DRILLS, Etc.



Every Description of Steel.

HAWKRIDGE BROS., 303 Congress St., Boston, Mass.

Tell 'em you saw it in ROCK PRODUCTS.



THE "BLAKESLEE"
GASOLINE ENGINE
STANDS SUPREME
LET US TELL YOU WHY

WHITE-BLAKESLEE MFG. CO., Birmingham, Alabama.
SUCCESSORS TO THE BLAKESLEE MFG. CO.

Write for Special to Dealers and Ask for Our New Catalogue.

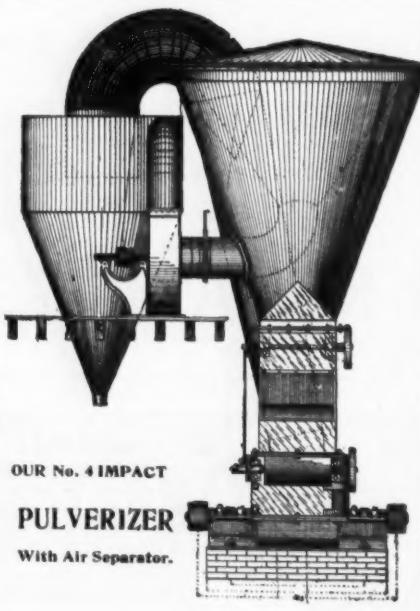
**The BRANNEN
ROCK and ORE CRUSHER**
WRITE FOR CIRCULAR.

Box 745. COLDWELL-WILCOX CO. Newburgh, N. Y.

THE
Louisville Drying Machinery Co.
Louisville, Ky.

DRIERS

For all purposes.



THE
GEO. RAYMOND'S

Latest Improved
**Centrifugal
Double Roller Mill,**
Self-balanced with Screen or
Air Separators.

Tube Mills with air separators and the Balance Ball Battery Mills will grind more and separate to any fineness desired, Cement, Clinker, Paint, Silica, Ore, Quartz, Limestone, etc., and take less power to run them than any other mills in the market. Specially designed separators for hydrating lime. Machinery of all kinds for reducing and separating any material to any degree of fineness.

MANUFACTURED BY

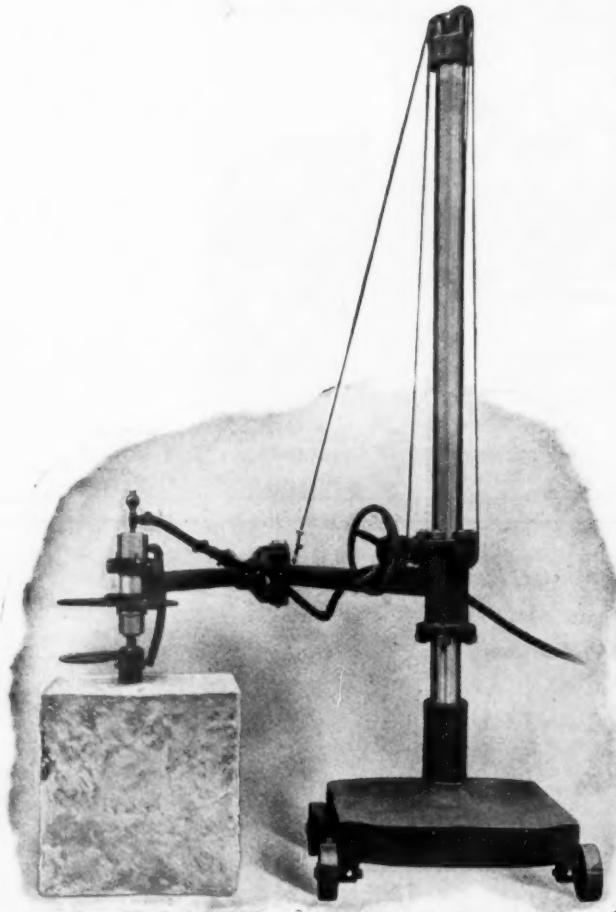
GEORGE RAYMOND MILL CO.

950-951 Monadnock Block,

CHICAGO, ILL.

Tell 'em you saw it in ROCK PRODUCTS.

Dallett Surfacing Machines



By their merits have won their way until their superiority is conceded and they have been adopted as standard by the largest stone working concerns in this country.

Economy in air consumption for work accomplished, low cost of maintenance and repairs and ability of the machine to distance its competitors in amount of work done per day are the features that have gained for this machine its enviable reputation.

We also manufacture plug drills and carving tools.

THOS. H. DALLETT CO.,

YORK AND SEDGELY AVENUE,

PHILADELPHIA, PA.

PITTSBURG CHICAGO BOSTON

CLEVELAND SAN FRANCISCO

CINCINNATI BARRE, VERMONT.

The Raymond Patented Vacuum
Air Separator

Reducing and Separating Machinery of all sorts
 for handling very fine Material. * * *

*Separators of Special Designs for
 Hydrated Lime,
 Air Separators for Cement Mills
 and Lime Plants,
 Roller Mills, Pulverizers,
 Special Exhaust Fans.*

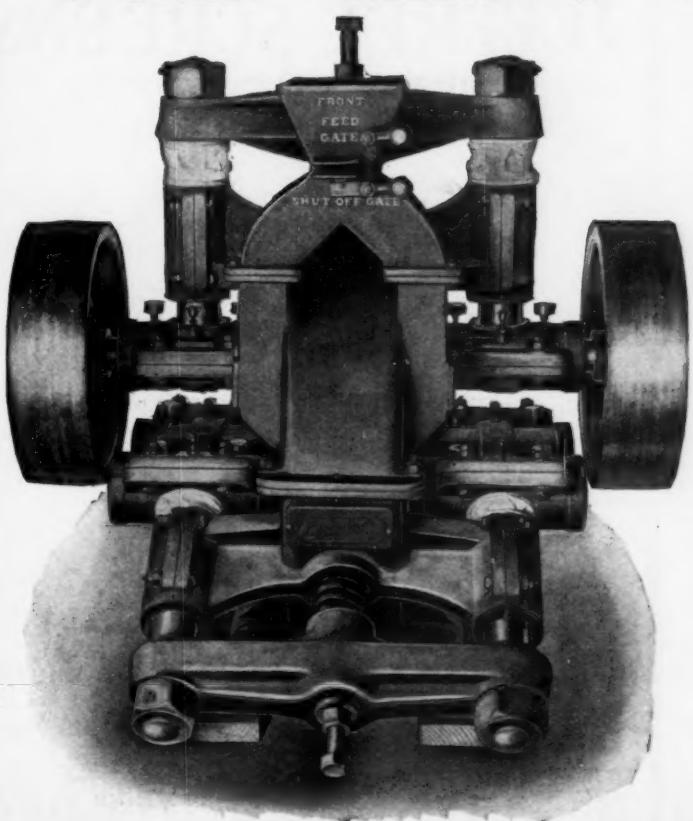
*Grinding and Separating of any material to
 ANY FINENESS.*

Absolutely dustless in operation.

**THE RAYMOND BROS.
 IMPACT PULVERIZER CO.**

141 Laflin Street, Chicago, Ill.

THE KENT PULVERIZER



Takes one inch feed. Grinds to any fineness
 from 10 to 200 mesh.

GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER,	40 bbls.	to 98%,	20 Mesh.
CEMENT CLINKER,	12 "	" "	100 "
LIMESTONE,	2½ tons	" "	200 "
LIME,	4 "	" "	100 "
ROSENDALE CEMENT,	43 bbls.	" 90%	50 "
QUARTZ TRAP-ROCK,	4 tons	" "	40 "

You can easily figure from this what a
 Kent Mill would save for you.

W. J. BELL, Esq. Supt.
 NEWAGO PORTLAND CEMENT CO.,
 Newago, Mich.

Says:—Four KENT MILLS are driven by one 75 H. P. motor.

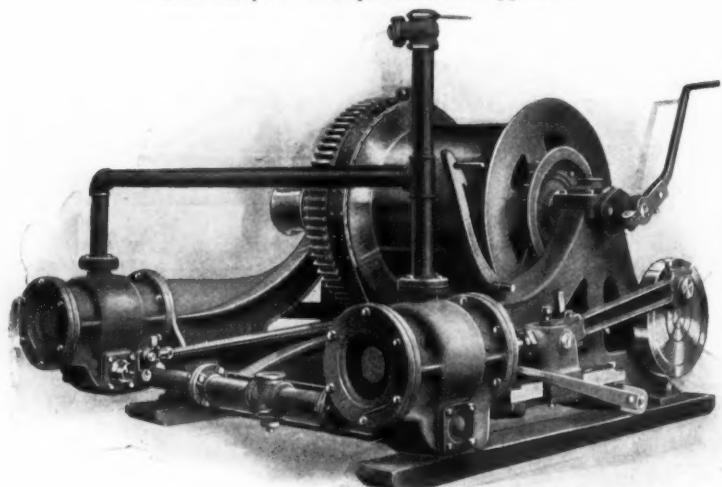
For Catalogs and Information, Address

KENT MILL CO.
 170 Broadway, NEW YORK.

Tell 'em you saw it in ROCK PRODUCTS.

The Quincy Mine and Quarry Hoist.

No Question About Its Merit or Efficiency.
You Decide Those Points Yourselves.
Sent Subject to Inspection and Approval.



BUILT BY QUINCY ENGINE WORKS, QUINCY, ILL.

Cylinders 8x10, Drum 14x20	\$496.00
Cylinders 8x10, Drum 24x24	505.00
Cylinders 8x10, Drum 30x30	525.00

These prices are cash without discount, but cover the complete machine f. o. b. Quincy, Ill., or Chicago. You have your choice of the Reversible Hoist or Friction Drum Hoist. We have both for prompt shipment. For Quarry work or for Mine duty you can't beat 'em. Strong, quick, simple, modern. Shall I ship you one?

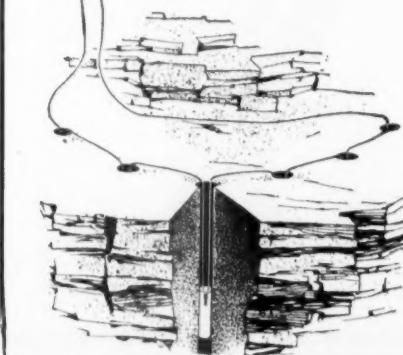
WILLIS SHAW,
MACHINERY. CHICAGO, ILL.

CHICAGO, ILL.

TRADE
LION BRAND
MARK

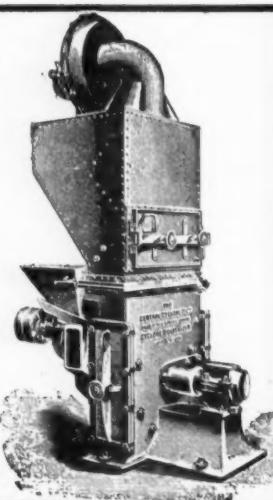
Electrical Fuzes and Aetna Dynamite

INSURE SUCCESS IN
BLASTING



MANUFACTURED BY
**The AETNA
POWDER
COMPANY**
143 Dearborn
Street
CHICAGO

"Cyclone" PULVERIZER.



STRAKER'S PATENT.

AIR SEPARATION—The product can be made of any desired fineness without sieving.

DUSTLESS in operation.

OUTPUT per H. P. per hour of the Cyclone Mills is much larger than that of any other mills.

We build SCREEN SEPARATION MILLS too.

CATALOGUE on request.

WRITE US WITH SAMPLES AND PARTICULARS.

E. H. STROUD & CO.

Manufacturers for U. S., Canada & Mexico.

30-36 La Salle Street,

CHICAGO, U. S. A.

A Screen That Will Work Well is Worth While. **JEFFREY SCREENS** ARE OF THAT CLASS



Capacity ranges from 50 to 275 tons per hour.
Separates Coal into any Size Desired.

SCREEN CATALOGUE No. 69 describes our many types
FREE on REQUEST with others.

THE JEFFREY MFG. CO., Columbus, Ohio, U. S. A.

NEW YORK. PITTSBURG. CHICAGO. DENVER. CHARLESTON, W. VA.

Tell 'em you saw it in ROCK PRODUCTS.

Ten Smith Concrete Mixers in One Order

Made in seven sizes. Any combination as to mounting and power. Endorsed by best Engineers and Contractors. Saves its cost in thirty days.



Nearly 600 in use. All giving perfect satisfaction.
Send for Catalogue and booklet, "Concrete Catechism."

COLONIAL SUPPLY CO.,
BOSTON, MASS.

THE WM. PATTISON SUPPLY CO.,
CLEVELAND, OHIO.

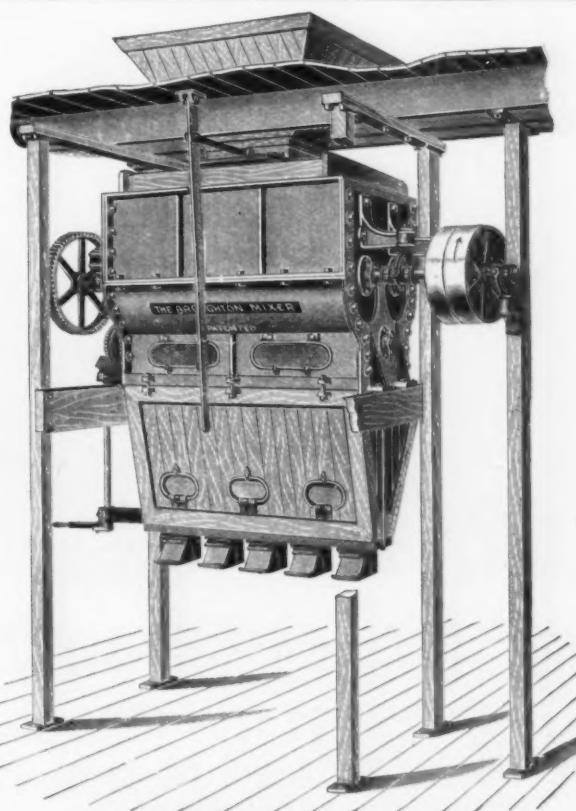
JOHN L. KIRK,
PITTSBURGH, PA.

HENSHAW BULKLEY CO.,
SAN FRANCISCO and SEATTLE

CONTRACTORS' SUPPLY & EQUIPMENT CO.,

509 West Fifth St., KANSAS CITY, MO.

232 Fifth Avenue, CHICAGO.

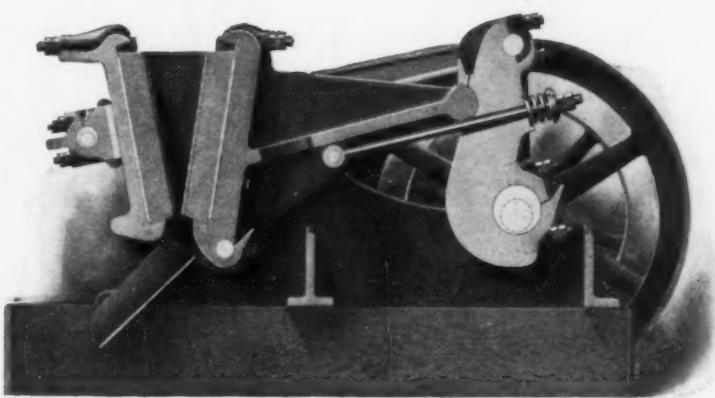


The most thorough and efficient
Mixers of Plaster, Cement and
Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N. Y.

SAVE THE PIECES FROM THE QUARRY There is a Good Profit in Crushed Stone

THE NATIONAL IS THE NEW IDEAL. It is built low down, consequently when decked over is **Easy to feed and safe to operate.** Steel side arms take the crushing strain. Safety devices prevent breakage. Lowest weight and easiest running crusher ever built.



SECTIONAL VIEW OF JAW CRUSHER.

The National Solid Frame Rock Crusher, built in four sizes, 8 x 15 to 11 x 22 Jaw openings. 10 Tons to 30 Tons hourly capacities.

We can design an inexpensive plant for you, which will yield a steady income from the material which would otherwise be wasted.

Crushed stone is being used more every day.

NATIONAL DRILL & MFG. CO.,

Head Office: Pullman Bldg.,
CHICAGO, ILLINOIS.

Tell 'em you saw it in ROCK PRODUCTS.



**"Kotten" Pneumatic Baby Surfacer
for Monumental Work.**

Surfacing Machines, Plug Drillers and Carving Tools.

WRITE FOR NEW CATALOGUE.

H. G. KOTTEN, M'fr,
120 LIBERTY STREET,
NEW YORK, U. S. A.

CENTRAL STATES: Sole Agents, Foster & Hosler, Chicago, Ill.
PACIFIC STATES: Sole Agents, Berger, Carter & Co., San Francisco, Cal.

CRUSHING ROLLS

CONSTRUCTED TO SUIT ALL REQUIREMENTS

Either SECTIONAL or SOLID, with teeth, corrugated, rippled or smooth face, and in sizes to suit any capacity.

PRICES ON APPLICATION TO

J. R. ALSING CO.,
136 Liberty St., New York.

Patentees and Manufacturers of
Modern Machines to reduce any kind
of Material. :: :: :: :: ::

PIONEERS OF THE CELEBRATED

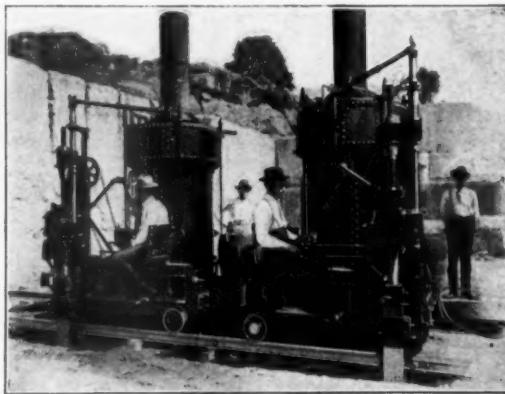
PEBBLE PULVERIZERS

Tell 'em you saw it in ROCK PRODUCTS.

SULLIVAN MACHINERY CO.

MANUFACTURERS OF
STONE CHANNELERS

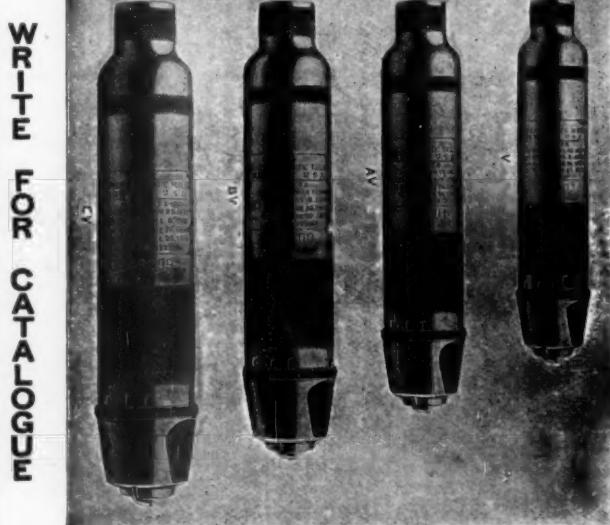
Catalogue No. 51



Sullivan "Class Y" Channelers, Bloomington District, Indiana.

Special Machines for Limestone,
Slate, Marble and Sandstone.

COMPRESSORS ROCK DRILLS QUARRY MACHINERY
GEO. D. HUNTER, Agent, Bloomington, Ind.



WRITE FOR CATALOGUE

INCORPORATED IN 1883

MANHATTAN TOOL COMPANY

SUCCESSORS TO
THE AMERICAN PNEUMATIC TOOL COMPANY,
136 Liberty Street, NEW YORK, U. S. A.

Valve and Valveless Tools.

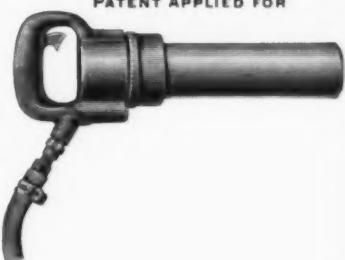
Surfacing Machines.

Complete Plants Furnished.

TELL US YOUR NEEDS, WE DO THE REST.

SOMETHING PRACTICAL.

The
Little Wonder Air
Hammer
Rock Drill



Will drill a perfect round hole by twisting machine back and forth one-fourth turn. Drills from 2 to 12 inches per minute according to hardness of rock. Strikes 2500 blows per minute.

The air passes through the bit and keeps it cool as well as clearing all cuttings from hole being drilled.

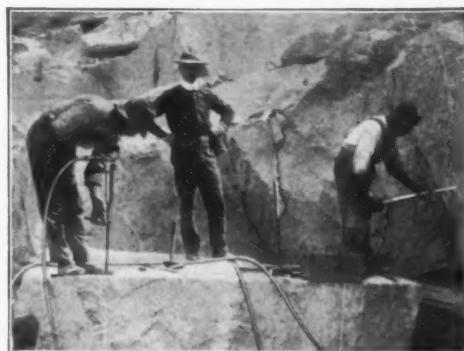
— ADDRESS —

Hardsocg Wonder Drill Co.
OTTUMWA, IOWA.



WRITE FOR CIRCULARS
AND PRICES.

PATENT APPLIED FOR



PLUG DRILLS IN OPERATION.

Oldham Pneumatic Tools

FOR CARVING, LETTERING, ETC.

**Surfacing Machines. Plug Drills.
COMPLETE PNEUMATIC PLANTS.**

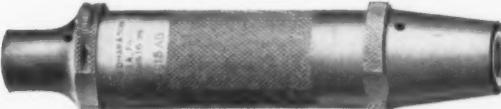
FOUR CARDINAL POINTS:

Simplicity Durability Economy Low Cost

TOOLS SENT ON APPROVAL.
WRITE FOR CATALOGUE AND PRICES.

GEORGE OLDHAM & SON

Manufacturers
FRANKFORD, PHILADELPHIA, U. S. A.



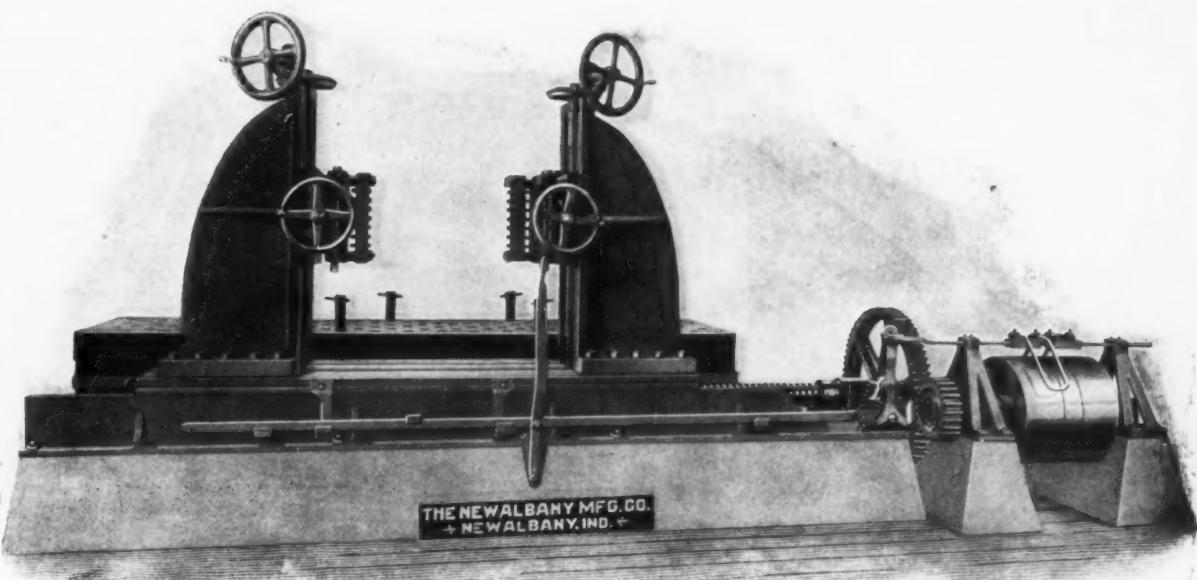
NEW ALBANY STONE-WORKING MACHINERY

OUR SPECIALTIES

Stone Planers,
Wardwell Channelers,
Steam and Electric
Traveling Cranes,
Screw Feed Gangs,
Power Hoists,
Derrick Irons,
Wire Rip Saws,
Derrick Turners, Etc.

Circular matter furnished
and prices quoted on
application.

Mills Erected Complete
Ready to Run.



OUR 9 FT. X 3 FT. 6 IN. HEADER OR JOINTER.

THE NEW ALBANY MANUFACTURING CO.

P. O. BOX 423.

NEW ALBANY, IND.

Tell 'em you saw it in ROCK PRODUCTS.

THE ATLAS CAR & MFG. CO.

MANUFACTURERS OF

Industrial Cars, Dumping Buckets, Stone Carriers or Skips, Dump Cars for Quarries, Mines, Cement Works and General Use.



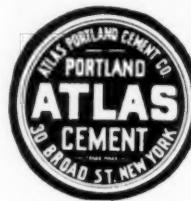
No. 600.
STEEL DUMPING BUCKET.
Made in Sizes to Order.

**Switches, Frogs, Rail,
Turntables, Etc.**

CLEVELAND, OHIO.

THE STANDARD AMERICAN BRAND.

ATLAS



ALWAYS UNIFORM.

PORLTAND
CEMENT.

A few of the many buildings and public works where "Atlas" has been used exclusively are as follows:

Piedmont Hotel, Atlanta, Ga.
Soldiers' Home, Johnson City, Tenn.
State Capitol, Jackson, Miss.
Waterloo Bridge, Waterloo, Ia.
Hanover Bank Bldg., New York, N. Y.
Broad-Exchange Bldg., New York, N. Y.
New York Life Ins. Bldg., New York, N. Y.
Claypool Hotel, Indianapolis, Ind.
Kimball Building, Boston, Mass.
Board of Trade Building, Boston, Mass.

Manufactured by
The ATLAS PORTLAND CEMENT CO.,
30 Broad Street, New York, N. Y.
SEND FOR PAMPHLET.

AMERICAN SEWER PIPE Co., Pittsburg, Pa.

**Sewer Pipe,
Flue Linings,
Wall Coping,
Roof Tile,
Hollow Building Blocks,
Fire Brick and Fire Clay.**

All Sizes Sewer Pipe, 2 inches to 36 inches Inclusive.
Large Size Pipe for Water Culverts and Water Conduits a Specialty.

37 FACTORIES IN FIVE STATES.

Tell 'em you saw it in ROCK PRODUCTS.